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Lecture.

SIMPLE MITRAL STENOSIS.

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Gentlemen:—The discussions which occupied the attention of the scientific world forty years since, regarding the symptomatology of mitral stenosis, and the great divergency of opinions which then reigned concerning its physical signs, are no longer remembered to-day. There was no longer any foundation for this controversy, from the moment it was admitted that simple, uncomplicated mitral stenosis is a rare lesion, being associated almost always with more or less marked insufficiency. As, on the other hand, the distinction between stenosis and insufficiency seems to be but of minor importance in the physiological pathology of the case, since the two lesions follow identical laws in their evolution, practitioners, in the end, no longer attempted absolute precision in a diagnosis of purely anatomical interest, and fell back on the comprehensive and very convenient term of mitral disease or lesion, which was considered sufficiently precise for all clinical purposes.

This opinion certainly corresponds to reality in the great majority of cases, and mitral lesion is the habitual type of "chronic heart disease." Have we not, however, gone too far, in almost denying a place among diseases of the heart to simple stenosis, as has been done in theory, particularly by foreign authors, and in practice by most practitioners?

There has been of late years some tendency toward reaction, commenced by M. Durosiez, in his interesting memoir in the *Archives Generales de Medécine* (1877) and continued in the theses of M. Marshall (1879) and of Marien (1880) both elaborated in Prof. Hardy's service, and though succinct, bringing forward certain clinical particularities which merit careful consideration.

Besides the common double lesion, stenosis with insufficiency, there seems to exist a variety of mitral stenosis which merits special description, particularly as regards its etiology and course. It is true that the elements on which to found such study are as yet, in great part, wanting; but it is none the less interesting to call your attention to certain unexpected results which are in contradiction with generally received opinions.

The etiology of this affection has received most attention. Durosiez had already shown that simple mitral stenosis is much more frequent in females (46 cases in women to 15 in men); this particularity has been confirmed by all the statistics collected in the thesis of M. Marshall, written under the direction of M. Landouzy.

In 100 cases observed by M. Landouzy, 85 were in women and 15 in men; Duckworth, in the St. Bartholomew Hospital Reports, Vol. xiii, says he met with 78 cases in women to 21 in men. The personal observations of M. Marshall show 76 per cent. of the cases as occurring in women. Finally, collecting together all the statistics, we find a percentage of 70 for women to 30 for men.

Although all these researches have not been undertaken with this special object in view, and several authors may have confounded the double

mitral lesion with simple stenosis, it is still plainly evident, from this notable percentage in a large number of cases, that the latter affection is much more frequent among women.

It is true, that many practitioners had already remarked a predominance of the mitral over aortic lesions in women; but no author had attributed to sex so marked an influence in the development of these alterations.

It may be said in general, that simple, uncomplicated stenosis is an affection peculiar to young women, for it forms no exception to the well-known law that mitral lesions belong particularly to the first period of life.

Very often it dates from childhood; unfortunately precise knowledge on this point is wanting; because, evidently, stenosis is more liable to pass unrecognized in young subjects than the other organic diseases of the heart, and it is thus rendered difficult to establish its period of development.

The point the most obscure in the etiology is concerning the influence of rheumatism, and in general, of maladies having a tendency to affect the endocardium, on the production of mitral stenosis.

While Duckworth found rheumatic antecedents in 60 per cent. and Durosiez in 50 per cent, of his cases, other authors, and particularly Hilton Fagge (Reynolds' System of Medicine), Landouzy and Marshall, admit, with Grisolle, that mitral stenosis is oftenest developed slowly and insidiously, without any possibility of demonstrating at any period the existence of rheumatism or arthritic manifestations.

We should incline willingly to this conclusion, but with great reserve, for nothing is more frequent than slight and incomplete manifestations of rheumatism in childhood, from simple chorea to torticollis or pulmonary congestion.

On the other hand, it is evident that the infectious diseases, the eruptive fevers particularly, may have some part in the etiology of mitral endocarditis.

Such a lesion may remain for years latent, being slowly organized, and yet have its source in one of the maladies common during childhood.

But extremely little is known concerning the influence of the different fevers, particularly of typhoid fever, in producing heart troubles.

It is at any rate certain that the primary causation or pathogenesis of mitral stenosis remains obscure; for in what manner can be explained the incontestable predisposition of females to this affection? We naturally seek the solution of this problem in the anatomical and physiological conditions special to women, and are led to incriminate either pregnancy or menstruation.

If it be true, as has been shown by Durosiez, that the morbid phenomena are oftenest observed after pregnancy, there is no proof that this condition has had any part in producing the cardiac alteration; ordinarily pregnancy only accentuates a lesion which up to that period has remained latent.

As regards the explanation put forward by M. Marshall, it does not seem entirely without foundation.

"The predominance of mitral stenosis in women, she says, may be due to the comparative narrowness of the left ventricular orifice and to the composition of the blood, which is, in all probability, peculiar during the period of sexual activity."

In this theory, the assimilation of the blood of females, during the period of genital activity, to that of rheumatic patients, on account of its deficient alkalinity, must be regarded as more than hypothetical.

The anatomical consideration invoked by M. Marshall has greater weight. Bizot has, in effect, demonstrated that the mitral orifice, under normal conditions, is narrower in women than in men; whence exaggeration of blood pressure at this point, which consequently becomes a place of election for inflammatory and degenerated alterations.

This peculiarity is the more interesting, as stenosis of the aorta, close to its cardiac origin, is also more frequent in females, a fact on which Virchow founded his theory of chlorosis.

If this last affection is, at least, in part, of congenital origin, yet remaining latent until the period of puberty, why should not the same thing happen for this variety of stenosis, which has many points of resemblance with chlorosis?

It is generally admitted that mitral stenosis cannot long pass unperceived; that its existence is early shown by functional disorders, which draw attention to the condition of the heart, and finally that it rapidly gives rise to asystolic manifestations. Death, according to generally received opinions, supervenes in a few years, six or seven at the furthest.

Is not this picture more sombre than reality, particularly as regards uncomplicated stenosis? and, on the other hand, is it always possible to recognize the organic alteration with such facility?

Many clinical observations show that the lesion may remain many years latent or give rise to but slight and fugacious derangements, such as slight dyspnœa on exertion, palpitations, epistaxis

(Durosiez), all phenomena common among young, healthy girls at the period of puberty.

Often, it is true, the signs of pulmonary trouble are more marked; there is a tendency to bronchorrhea, with slight but repeated hæmoptysis, which call attention to the state of the heart. But even under these conditions how frequent are the errors of diagnosis.

At the début of the sexual period in young girls, the menstrual flow disappears entirely for several months, or is frequently obstructed; the patient becomes pale, takes on a chlorotic appearance, is easily put out of breath, catches cold at the slightest change in the weather, and often complains of abundant expectoration; when, then, in connection with all these symptoms, hæmoptysis appears, the attending physician necessarily thinks it is the début of tuberculosis. Auscultation of the lungs reveals here and there foci of fine râles, while physical examination of the heart remains almost negative, the signs observed being so slight that they are considered to be simply functional, and due to the neuropathic condition of the patient.

Thus is constituted, to use the expression of M. Germain Sée, a latent cardiac affection, of either dyspnœic or hæmoptoic character, and the young girl, who, for that matter, presents hardly any of the general symptoms of heart disease, is for years treated for tuberculosis.

For, notwithstanding all the entirely theoretic considerations of pathological physiology, which deny any durable compensatory action to the left auricle, this latent period may last a long time if no perturbing medication be instituted.

But this state of equilibrium, necessarily unstable, will be broken, and things take on an entirely different appearance, from the moment the heart is accidentally overworked.

Such is the case for men of dissipated habits or exercising a fatiguing profession; and thus may undoubtedly be explained the greater gravity and the more rapid progress of the disease in men.

Such is particularly the influence of pregnancy; many of the cardiac symptoms observed at this period, and generally attributed to functional hypertrophy of the heart, are in reality due to the existence of this form of mitral stenosis, which had remained almost or quite latent up to the period of pregnancy.

From the moment the heart is, as it were, forced, all the general symptoms of mitral disease are successively produced; it is, however, oftenest by intense dyspnœic manifestations, or very abundant hæmoptysis, that the asystolic period commences.

Very gradually the heart dilates, secondary insufficiency is developed, and from that period the double mitral lesion is constituted, with its usual clinical signs. The physician who then sees the patient for the first time can but affirm the existence of mitral disease, without suspecting what has been the course of the morbid process.

This explains how this variety of mitral stenosis has so often passed unrecognized, and why its nosography is as yet imperfectly elaborated.

Communications.

DIABETES MELLITUS.

BY PH. M. SCHIEDT, M.D.

Read before the Northern Medical Association, February 24th, 1882.

At the very threshold of our inquiry we are met with complications, difficulties, and obscurities; and though this disease has been supposed to be known to the ancients, from the first century, and diagnosticated fully by Willis, in 1674 and by Morton, in 1675, yet to-day the subject is all confusion; not even have we arrived at a satisfactory state in nosology; the various authors are as much at variance with their classifications as they are with theories, pathology, and therapeutics.

One will classify this disease as pertaining to diseases of the liver; a second to the diseases of the alimentary canal; a third to urinary affections; a fourth to the nervous system; a fifth to diseases of pancreas; a sixth to the kidneys; a seventh to general or systemic diseases; while still another class do not consider it worth while to make any subdivisions, calling it "accidental," because, as they say, it may occur from injuries, falls, a gouty diathesis, and even that very many old people, by virtue of their decrepitude, are diabetic.

Its etiology and pathology are as dark and obscure as any disease we are called upon to treat. Finally, its prognosis and therapeutics are as discouraging and unreliable as in tuberculosis and carcinoma. At the present enlightened stage of medical literature and science, with all its modern appliances, we are confronted with the question: "What do we know about diabetes?" and the humiliating answer must go forth, from every conscientious physician who is called upon to treat this sometimes very chronic disease, "we know very little." Therefore, it behooves us, as physicians and guardians of health, as well as in the interest of science, and the further advanc-

ment of individual knowledge, to be ever on the alert for what may enhance or seem to enlighten our understanding of this persistent, though not very common, disease; any facts or any line of treatment, or any drug, that seems to offer success should be recorded for our mutual benefit.

For this reason I will now briefly record a case of diabetes mellitus that recently came under my care and observation, where it seems that I was successful in the treatment adopted, with such other remarks and notes as I was able to collect during the short time that has been at my disposal for the preparation of this paper; any shortcomings you will kindly bear with.

On December 3d, 1881, I was called to see Mrs. K., aged 40, who presented the following symptoms:—

She told me that for some time, about three months, she had been feeling unwell; was emaciating frightfully, although she had what she supposed a fair appetite; she felt always fatigued; did not wish to take any medicine, and, in consequence, neglected to send for a physician sooner than when I was called. When I saw her she complained of excessive thirst, profuse micturition, at times accompanied with incontinence of urine, and a burning sensation, having an erythema about the vulva and the meatus urinarius, and some parts of the thigh, accompanied with intense itching, for which she principally called me in. She was peevish, had flushes to the face, had a worn, distressed countenance; her tongue had a dry, red, yet fissured appearance. She had a dry, harsh skin; complained of chilly sensations, and stated that her eyesight was failing. I was furnished with some of her urine, which was slightly colored, resembling water more than urine; its sp. gr. was 1.050, and with several tests gave the reactions of a great quantity of sugar. The urine was sticky to the hand, like molasses. She also passed a large quantity, at first from 10–12 qts. in twenty-four hours. My diagnosis was diabetes mellitus. What could have been the etiology of this case, I was unable to trace.

Etiology.—The etiological data of this disease recorded by the authors seems to be nothing but confusion. It is said that this disease is not known to occur in any other animals but man, and, therefore, Benardt inclines to the theory that it is due "not to the pathological change or disease of the liver, but depends upon the nervous derangement of the liver due to enervation?" It occurs most frequently in adults from 25 to 65 years; the ratio of males is 3 to 1 between 30 and 40, while the same ratio holds good in females from 10 to 30; between 10 to 20 the number of females affected by this disease is greater than that of the males in the same decade, as well as that of the females in the two succeeding ones. It is found more commonly, at a later period, in persons among the higher walks of life, such as private gentlemen, the clergy, lawyers and doctors. It has occurred in very young and in the very old. Griesinger found, in a table of 618 cases, 4 under 10 years, and 16 from 70 to 90. Hereditary predisposition is denied by some, as unfounded in practice, yet some records by well authenticated authors do not admit of any doubt that hereditary influence has something to do with it, even if it only can be traced rarely. While in some cases, parents and children have had the disease, yet the larger part of children *escape it*, or its transmission may pass over in one generation to be found in another. Bouchardat found it in a brother of one of his patients, who had no idea that he was affected. Dr. Prout met it in an uncle, a brother and a sister of the same family; and another family where *seven* had the affection.

It is said that this disease hardly ever occurs in negroes, while it is very common among the Jews; such as are bankers. It is rarely observed in Holland, Russia, Brazil and Central America; its appearance is very much oftener in England, Germany, France, and especially in Scotland and Ceylon. The exciting causes recorded in the books are one mass of multiplicity, yet in very few cases are we able to make them out clearly. Injuries to the head, and especially concussions of the whole body, and injuries of the spinal column; softening and degeneration of the brain or medulla oblongata; excessive mental exertion, grief, depression, sexual excesses and also *sexual continence*, as reported in the MEDICAL AND SURGICAL REPORTER, January 21st, 1882, by Dr. H. C. Yarrow. Exposure seems to be a fertile cause, especially during the menstrual epochs. It may occur during pregnancy and lactation, and is said also to arise or follow diseases of the pancreas. Prentis found, in five cases out of nine of fatty degeneration of the pancreas, diabetes mellitus. In cirrhosis of the liver, in phimosis, in intermittent fever temporarily, in impotence and in aged people without any apparent disease. It is also produced artificially in poisoning by strychnia, woorara, chloroform, and carbonic oxide, and in puncturing the floor of the fourth ventricle. Finally, but not least of all, a fruitful etiological source for this disease is undoubtedly intemperance (the bane of civilization and the curse of homes).

Symptomatology.—The brightest feature about this whole subject is doubtless its symptomatology. Though a vast array of symptoms are generally given, yet with a few pathognomonic signs we are enabled quickly to diagnosticate this affection: such are frequent micturition, excessive thirst, rapid emaciation, a dry, fissured tongue, with a urine of high specific gravity, ranging from above 30, from its incipiency, and the response to the chemical tests for sugar. Dr. Roberts says: "If a child is found masturbating suspect diabetes mellitus."

Among the symptoms enumerated by the various authors are excessive thirst, polyuria with painful micturition, voracious appetite, anorexia, rapid emaciation, the red, fissured tongue, with longitudinal streaks along the dorsum, and especially at the edges; sometimes it feels sticky to the touch and appears to the patient as adhering to the palate; the teeth may become loose in their sockets, and the gums are often found spongy and bleeding easily. We often have a dry, furfuraceous skin, even at times intolerable itching, with excoriations about the external genitals; so that if we have pruritus at the external genitals or anal regions, especially in women and children, it behooves us, as Dr. Roberts says, to examine the urine; constipation, with various dyspeptic symptoms, follow in quick succession. They often have chilly sensations at various parts of the body, so that Pettenkoffer and Vail found that diabetic patients lose the power (which healthy persons possess) of storing up oxygen in the body during the night, for utilization during the day. Loss of sexual appetite and power is often noticed; whether due to this or other causes is hard to say. Klebs asserts that in diabetes the liver is universally enlarged. Stock and Frerichs say it is due "to the prolongation or new formation of the secretory cells of the liver." The nervous system seems to be greatly disturbed. We find a peevish disposition, an easily irritated temperament; the memory often fails, and the patient frequently becomes melancholic; cramps are very common, especially at night. We may have hyperæsthesia, and also partial anæsthesia. Trousseau mentions amblyopia, total failure of vision, and cataract; while Brunton speaks of presbyopia and total failure of sight following or complicating this disease. The quantity of urine passed is very largely in excess of its ingesta, sometimes amounting to 80 and 100 ounces per diem; while Dr. S. D. Gross (Diseases of Urinary Organs) has recorded from two to four gallons in twenty-four hours. Aitken says it has reached, in some cases, thirty or more pints daily. Dr. Elliotson, in his Practice of 1844, speaks of a case where it was *fifty-two* pints daily. Its specific gravity may rise as high as 1.040–50, while Bouchardat has seen in one case, recorded by Trousseau, the specific gravity as high as 1.074.

I have used in my case Trommer's, Moore's also the fermentation tests; over night I found the bottle filled by what I presume were the "Tarulæ cerevisiæ." I also used the subnitrate of bismuth test mentioned by Dr. Tyson. I would particularly draw your attention to this test, as it is easily carried out, and seems to be quite reliable. Only a small portion of the bismuth is placed in the tube with the diabetic urine, and boiled for a few moments; if sugar is in the urine we will have a *black deposit* with a black solution, where if there is no sugar it will remain light gray. The only objection I have to this test is the disagreeable odor emanating from it while testing; I do not think that Dr. Tyson speaks of this, and it is unlike anything that I ever perceived before; I am at a loss to what to compare it.

Although pathology of the different diseases has been greatly revolutionized since Virchow, Benhardt, Rindfleisch, and others have become eminent in this branch of science, yet to day the pathology of this affection is still very much shrouded in dark obscurity, and we know not what theory to believe, for the various pathologists are at variance (with each other), and often contradictory. Brunton says, "the presence of sugar in the urine, as an abnormal constituent, has been long known; but the pathological processes which it indicates are only now, thanks to the labors of Benhardt, Czan, Eckhardt, Flint, Gusk, Pavy, and others, beginning to be clearly understood." Even to-day we find diabetes ranged in the text-books as diseases of the kidneys and albuminuria, when we know that these organs are not at fault.

Niemeyer says the theory which holds that "it is due to the alkalinity of the blood, presupposing that the sugar or glycogen is formed *in* the blood constantly, has been disproved." The fermentation theory, which supposes that the excess of sugar is due to the abnormal conversion of amylaceous matter into sugar, he says is untenable.

Dr. McDonnel has advanced the theory that the "hepatic (dextrin) is not converted into sugar, but united with nitrogen to form a new protein compound resembling casein."

Benhardt leans to the prevailing theory of

modern pathology *which attributes the glycogenetic functions to the liver*, where *diabetes* may be due either to *increased introduction of sugar* or *to diminished destruction* of it, or to both of these together, *but adds, that it depends upon the nervous derangement of the liver* (hepatic cells), due to *enervation of the same*, and says "*if it was in our power to galvanize* the *sympathetic nerve, we would have the best treatment of this disease.*

Teherinoff says: "*The liver sugar is not made from the glycogen*, but on the contrary *glycogen is formed from the sugar which arises in the liver.* Hence, instead of glycogenetic (sugar forming) it should be called "glycophthinium" or (sugar consumer). *If the liver loses its capacity to convert the sugar* into "*glycophthinium*," *it remains in the blood and diabetes mellitus follows.*

In Ziemssen's Encylopædia we find the theory that diabetes is due simply to hypertrophy of the glandular parenchyma, when it is probably connected with an increased and accelerated *formation* of glycogen in the hepatic cells. And according to Stock and Frerichs it is due to the swelling of the liver, and that it may also be due to the prolongation of *new* formation of the *secreting cells.*

Niemeyer states that the puncture of the floor of the fourth ventricle does not depend upon functional abnormality of the kidneys, as sugar is not found in them, but is excreted from the blood. I think I cannot do better than to extricate from this labyrinthine confused pathology, what is the resumé in Reynolds' System of Medicine. "Diabetes may arise, 1st, from increased formation of sugar, due to (*a*) excessively rapid digestion of starch or sugar; (*b*) to failure or imperfection in the glycogenetic function of the liver, and possibly to some extent, also, of the muscles; (*c*) to increased transformation of glycogen into sugar, due to accelerated circulation through the liver, or a larger proportion of ferment in the organ or the blood. The circulation may be quickened, either by increase of the general arterial pressure, or by dilatation of the vessels of the liver, and especially of the hepatic artery. Increased blood pressure may be due to muscular exertion, such as occurs in epilepsy, or to contraction of the arterioles, such as is caused by impeded respiration, exposure to cold, cholera, and Bright's disease; the hepatic vessels may be dilated reflexly; irritation applied to the vagus, either at its ends in the lungs, liver, or intestine, in its trunk, or at its roots in the medulla, or to the cerebrum, cerebellum, pons, and probably some of the sympathetic ganglia. They may also be dilated, and the current in them accelerated, by section of their vasomotor nerves at any point between the medulla and the liver, provided that the interspinal vasomotor nerves are not also divided, and the supply of blood so much diminished that no increase in the hepatic circulation follows the section. Increased formation may also occur in the muscles.

2d. Diabetes may also arise from lessened combustion, due either (*a*) to insufficiency of the ferment which should convert the sugar into lactic acid and glucose; (*b*) to an altered quality of the sugar which enables it to resist the action of the ferment, or (*c*) to diminished circulation through the muscles preventing the sugar from coming sufficiently into contact with the ferment.

The therapeutics of this disease seem at present more varied and less encouraging than its mixed up etiology and pathology. From its very inception the treatment has been as varied and empirical as carcinoma and tuberculosis. Many drugs and varied lines of treatment have been used, but none with perfect success. The rich materia medica seems to be powerless and useless against the stubborn chronicity of this affection. Niemeyer and Pavy refer to carbonate of ammonium, bicarbonate of sodium, in from ʒj to ʒiv doses, to opium, belladonna; Roberts mentions codeia in ¼ to ½ gr. doses. Mr. Richardson, of England, speaks of peroxide of hydrogen, of tr. iodine 20 to 30 gtts., also of Fowler's solution from 3 to 30 gtts. Having read that Dr. Da Costa used the fl. ext. of ergot in diabetes insipidus, I thought it would be worth a fair trial in this disease, since no drug seemed to be known up to the present time which could be relied upon. As ergot possesses the power to contract the arterioles of the vascular system, and according to one of the accepted theories, we have dilatation of such, I gave it in fʒss doses three times per diem, and continued it for some time. I found by its use that the specific gravity was reduced within one week to 1.040, its quantity from 10 to 12 qts. to 6 to 8 qts, the thirst diminished, and the itching abated. Thus the improvement gradually and steadily took place until the urine was diminished to 1 to 2 qts. per diem; no thirst, no itching, very little sugar, and patient feels almost like a new being.

In the continued use of ergot for over a period of two months, I found very few manifestations of ergotism. I treated her solely with the ergot, with the exception of some intercurrent remedies to correct existing symptoms. Of course, I am well aware that restriction in diet must be complementary to the use of drugs. Most authors

agree that the best success is attained not by an exclusive diet, either of animal or vegetable food, but a proper restriction of vegetables becomes necessary to prevent glycogen from being continually formed. Vegetables that contain sugar or starch must be prohibited. Meats, fish and poultry should be largely given. Eggs, cream, milk, and some butter. Vegetables, especially such as should be freely partaken of, are greens, spinach, cresses, lettuce and cabbage. No wheat bread, but bran cakes and bread.

I am quite conscious that a single case is no criterion to go by; yet I think the apparent success obtained in this case should be followed by the medical fraternity, and its results frankly recorded, and perhaps the future will show that it may be efficacious.

Remarks and Discussion of Dr. Schiedt's Paper.—Dr. J. B. Walker, referring to the beneficial results obtained in some instances, by the administration of ergot, related the following:

Case 1.—Male, inmate of Blockley Hospital; presented all the ordinary symptoms of diabetes mellitus. Diuresis amounted to 26 pints per diem. Patient was enabled to surreptitiously procure preserves and sweets, and regulation of diet was impossible, yet, notwithstanding this, he improved greatly under the use of opium and ergot, which were administered combined, separately and alone. The ergot was manifestly superior to the opium, and the results such that the patient left the institution considering himself so well as to need no further medical attention.

Case 2.—Female. Two years ago, while sojourning in the country, she received unpleasant news which, in addition to the great anxiety, occasioned marked mental depression. Almost immediately diuresis occurred, amounting to from ten to twelve pints in the twenty-four hours. The tests for glucose responded characteristically. Her skin, instead of the usual harsh, dry character, presented a moist and pliant surface. The bowels were not confined, but moved daily. The treatment consisted in restricted diet and the administration of ext. ergotæ fld., f℥ ss t. d. Marked improvement followed, and the patient passed from under observation almost entirely well.

Case 3 is one of which I have some knowledge, although it was under the care of Prof. Clara Marshall. The detailed history I cannot give, except that all the symptoms of diabetes mellitus were present. The patient was restricted in diet, and the treatment consisted of the exclusive use of opium. The result was everything to be desired, as a complete cure resulted. . . . .

There is no specific remedy for the direful malady, and the treatment must be regulated and depend upon the peculiar determining conditions found in individual instances, as is evinced by the citations just made.

Case 2 probably depended upon dilatation of the cerebral vessels, and, therefore, was ergot especially indicated. Opium probably acts by virtue of its power to exert a sedative influence upon the cerebral centre, and is indicated in cases of nervous excitement, which determines a hyperæmia of the centres.

Dr. J. T. Eskridge exhibited a section from the pons of a patient who died from diabetes mellitus, and another from the pons of a patient who died from general paralysis of the insane. The only noticeable feature consisted in a slight change of form of a few of the nerve cells in each specimen, which probably were the result of the necessary manipulative processes consequent upon preparation. Nothing pathognomonic was discernible.

He also directed attention to latent diabetes mellitus, and narrated an instance of a sudden death, where examination of the urine revealed the existence of glucose in abundant quantity. In reference to the efficacy of ergot, he referred to a case of a girl, ten years old, in whom diabetes insipidus existed. The quantity of urine daily voided varied from ten to fifteen pints. Ergot, in the form of the fluid extract, was administered, and the results so marked that the patient was considered sufficiently improved to abandon further medical advice. In an instance of this disease, far advanced, where vision was so impaired that the patient was only enabled to distinguish day from night, ergot proved absolutely useless. The Doctor is of the opinion that in the early stages of the disease much may be expected from ergot.

Dr. L. Brewer Hall does not feel disposed to admit that diabetic cataract is the direct result of the action of glucose upon the lens, and inclines to the belief that it results from the general adynamia resulting from the disease. He referred to the experiment of producing cataract artificially by injecting solutions of sugar into the anterior chamber, in healthy individuals, but especially directed attention to the difference of true cataract occurring in diabetes mellitus, and the mere cloudiness following the injection of sugar solutions. He also spoke of the excess of fat in the blood, lipæmia, existing in this affection, and mentioned the case reported by Dr. Heyl, of

appearances of the eye ground. The fatty emboli clogging the pulmonary vessels and the fatality resulting therefrom he especially dwelt upon, and desired to impress the Society with the fact that many of the concomitant phenomena too frequently attributed to the direct effects of glucose are often due to fatty emboli which plug the capillaries and impair function. In a case of impaired vision coexisting with diabetes mellitus benefit was derived from the use of full doses of potassium bromide.

Mrs. Dr. Higgens, from the Pacific coast, a visitor, on being invited to participate in the remarks, related instances of several cases occurring in her hospital experience some twenty years ago, when restriction in diet was not enjoined. The cases all terminated fatally, or at least, no cures were noted. A relative, who lost three children in a short time, grieved greatly, and was, in consequence, afflicted with diabetes mellitus. Under the use of valerian and ergot she improved, and finally was cured. Any new trouble, however, was accompanied by a return of symptoms, which always entirely disappeared by the above treatment.

Dr. Wittig, referring to the pathology, believes the kidneys to be the principal seat of trouble. Iron, he considered to be especially needful, when renal hyperæmia constitutes an element of the disease, by virtue of its astringent properties, and inclines to the belief that it acts in a parallel manner with ergot.

When general asthenia has developed, he considered it of great importance to institute general analeptic treatment, and recommends the use of remedies like strychnine, valerian and cinnamon, which are to be alternated with iron. The mineral acids, especially nitric and sulphuric, are of value in certain conditions of this disease. The general condition of the patient apart from the direct disease should not escape our most careful attention, not only by reason of his or her comfort, but for the beneficial effects which such measures exert upon the diabetes.

ACUTE MILIARY TUBERCULOSIS.

BY CHARLES R. CRANDALL, M.D.,
Of Portland, Maine.

A. M., aged 43 years, and a mechanic by trade, was tall, of dark complexion, and well built. Had always enjoyed good health up to the commencement of the illness now to be described. His family history was good, both parents and several brothers and sisters now living.

For three weeks previous to coming under observation he had suffered from frequent irregular chills and sweats, which, according to description, simulated those of malarial origin. These recurred more or less each day, but were without the phenomena of periodicity. There was also more or less fever during this period of the disease, but not sufficient to cause the patient much alarm. Associated with these more marked symptoms, were also some cough and a noticeable decline of strength, which finally made it necessary for him to give up work, and seek medical treatment. There was also impairment of appetite, but otherwise digestion was apparently good, and the bowels acted with natural regularity.

When first seen, three weeks from the commencement of the disease, and two weeks previous to death, the appearance of the patient was well calculated to attract attention. The facial expression was that of one having been on a debauch. The countenance was haggard, the eyes unsteady and wild in their expression, while the forehead was wrinkled and bore evidences of some recent superficial abrasions. The signs of debility were most striking, as shown by the haggard countenance, by general tremor of the hands, arms, legs, and muscles of the face. Another no less noticeable objective symptom was the peculiar dusky, livid hue of the skin upon the face and neck, and which was also found to be quite general over the entire surface of the body. In shade the hue was much like that peculiar to typhus fever, or to that sometimes seen in cases of typhoid pneumonia.

At times this peculiar lividity would become intensified and take the form of "come-and-go-flushes," and these in turn would fade out into ashen or cadaverous shades.

At this time the pulse was 110, temperature 102, and breathing was somewhat accelerated. Harsh or exaggerated inspiration was general throughout the chest, and expiration was prolonged. Normal resonance all over the chest, with the exception of a slight elevation of pitch at the right apex. Aside from over action, the heart was not affected. The urine was also found to be normal. The abdomen was normal in tension and there was no tenderness or gurgling in the right illiac fossa. The bowels moved once daily and the fæces appeared natural.

The patient was ordered to remain in bed and systematic observations and treatment were carried out. The above-described symptoms intensified rapidly, and there followed a marked decline of vitality, although the treatment was of a most sustaining character.

One week from the time the above symptoms were noticed, the dusky hue was increased, if anything. The pulse varied between 110 and 150, with extremely low tension. Respiration had increased to 56 per minute. The temperature was continuously elevated, ranging from 102 to 104½. Spells of profuse sweating occurred at irregular intervals during both day and night. Upon inspection could be seen the rapid and labored breathing, the generally good distention of the entire chest, but now it was evident that the right side was not quite so expansile as the left. Percussion resonance nearly normal all over the chest, excepting a slight increase of the elevated pitch at the right apex. Auscultation, at this time, detected an increase of the harsh inspiration; prolonged expiration, especially at right apex; good expansion of the air vesicles; no bronchial breathing, either anteriorly or posteriorly.

Towards the end of the second week under observation, or the fifth week of the disease, the general symptoms continued about as mentioned above; the most noticeable being the livid hue, the weak, rapid pulse, the high temperature, the rapid breathing, *subsultus tendinum* and the presence of fine mucous râles throughout the chest. Finally, exhaustion became complete, the temperature declined for several hours until it reached about normal, and death ensued, occurring at the end of the fifth week of the disease. Cough and expectoration were slight during the entire course of the disease. There was no delirium and the only brain symptom of note was a seeming dullness of mind or general indifference.

Post-mortem.—The body retained the dusky or livid hue. The venous system was everywhere engorged. The lungs were of a deep purplish shade; their surfaces were studded everywhere with miliary tubercle. To the touch, the lungs were dense, semi-elastic, and felt as if fine shot were imbedded throughout their structure. On section the connective tissue was found to be uniformly filled with "miliary nodules, which present that gray, translucent appearance of fresh tubercle." In places here and there in the inferior lobe of right lung tubercles had begun to soften and were in the first stages of caseous degeneration. There was an excessive deposit of tubercles at the right apex, which explained the high pitch causing percussion dullness before referred to. There were no cavities in the lungs. Deposits of tubercle were also found in the liver, kidneys, spleen, and intestines. The right heart was filled with black, clotted blood.

The brain was not examined.

Acute miliary tuberculosis has been defined by Bartholow to be a febrile affection due to deposit generally throughout the body of the gray tubercle granules. It is a disease remarkable for its obscurity, for its rapid progress, and also for its fatality. Moreover, it is a disease well calculated to deceive, not only on account of its rarity, but also for its tendency at the outset to simulate other diseases. In some cases the repeated chills, high temperature and night sweats are highly suggestive of malarial infection. Other cases simulate typhoid fever so completely that Trousseau speaks of a typhoid form of galloping phthisis. It is in this form that the dull expression of countenance, low delirium or headache, *subsultus tendinum* and morning and evening oscillation of temperature are well marked. Again, acute miliary tuberculosis may be confounded with typhus, as in both there is fever, debility, rapid pulse and dusky hue of the skin.

But, after all, such confusions may generally be cleared up by a careful investigation of the history of the case and an intelligent differential diagnosis. Perhaps no other disease so well illustrates the value of diagnosis by exclusion, or what Niemeyer terms "negative information," as does this rare form of tuberculosis.

The disease is remarkable in another sense, owing to the fact that it often lights up and runs its rapid course without any assignable cause. Indeed, the etiology of the disease is not well understood.

Buhl, for instance, assigns the origin to the absorption of caseous matter from antecedent lesions, as ulcers, abscesses, or serous inflammations in other organs. Bartholow adopts the view "that the gray granulation is deposited throughout the body under the influence of certain kinds of irritation; it is necessary that a peculiar vulnerability of the constitution exist; in other words, that it be of the scrofulous type."

On the other hand, Niemeyer declared, owing to cases occurring without any trace of antecedent lesion, that acute miliary tuberculosis is a secondary disease arising in some manner as yet unknown to us, from the pernicious effect of the cheesy deposit; but that may proceed from other causes of whose nature we are equally ignorant.

Concerning the case under consideration there were no evidences of antecedent lesion, primary disease, scrofulous diathesis, or hereditary tendency.

The symptoms of acute miliary tuberculosis are well worthy of further remark. In cases occurring independent of primary disease, the most important early symptoms are rapid decline

of strength, more or less chills, rapid breathing, dyspnœa and fever. The chills come on rather abruptly and are more or less persistent. They may be suggestive of malarial chills, but, if anything, they are more like rigors, being without periodicity. There is also more or less continuous fever with remissions, hence the temperature may range from 100 to 104½. The temperature is of especial value in diagnosis, for it is calculated to excite the closest scrutiny, and should suggest the presence of a grave constitutional disease. The temperature is not at all influenced by remedies, but continues moderately high and changeable until the last week of the disease, when it gradually declines, falling to about normal just before death. Early in the course of the disease sweats are generally a noticeable symptom; they usually occur during the remission of the fever. They are of en very profuse and persist with varying frequency during the entire disease. To some, the sweating and the condition of the skin are remindful of the death agony (Bruen). Respiration becomes accelerated in the early stages, and is one of the most marked and characteristic symptoms. The frequency ranges from 30 to 60 per minute, and, as a rule, is thus maintained until death.

Cough is also a usual attractive symptom, which is due, probably, to irritation of nerve filaments by tubercular deposit. Later on cough may result from the effort to expectorate catarrhal mucus, the presence of which is due to hyperæmia of the bronchial tubes. Cough, however, is a variable symptom, said to be marked in some cases and nearly absent in others.

An extremely rapid pulse is also one of the marked features, and one which is sustained from first to last. The frequency varies from 110 to 150, and is often out of proportion to the temperature. The pulse is small, weak, often becoming thready, and is strikingly suggestive of the great exhaustion that is going on. By some authorities this persistently rapid pulse is given great diagnostic prominence, and is esteemed a fundamental symptom of this malady (Bruen).

In this form of tuberculosis there are generally well marked nervous symptoms, but they are not characteristic. If present, they are much like those of typhoid fever, and hence, there may be stupor, headache, possibly low delirium and *subsultus tendinum*. In the cases now under review, the nervous symptoms were prominent, as shown by fibrillary movements all over the body, and general unsteadiness and tremor of the limbs.

The dusky hue or lividity of the skin, before alluded to, is another important and common symptom. It may appear quite early, but generally is most marked in the latter stages of the disease, when circulation has become very feeble and the excessive deposits of tubercles have impinged upon the arterioles, preventing due aeration of the blood.

Singularly enough, physical examination is often unsatisfactory in the highest degree, save as a method of obtaining "negative information." Indeed, it is positively confusing to come across a patient having dyspnœa, rapid breathing, probably cough and expectoration, a cyanosed skin, and then not be able to find any physical signs of pulmonary disease. Yet such may be the case in the earlier stages of acute miliary tuberculosis. As a rule, inspection will not discover any change in the contour of the chest. Auscultation may, in all probability, discover harsh inspiration, feeble expansion and prolonged expiration. The presence of fine mucous râles in the bronchi may also possibly be detected. In some cases, however, none of these signs will be discovered by auscultation. Toward the end of the disease the râles referred to are generally present in considerable numbers. Percussion, as a general thing, is as unsatisfactory as inspection and auscultation. If the percussion note is changed at all, it is when the disease is well advanced, and is manifested by a slight elevation of pitch at the apex of one or both lungs. The question may well be discussed, since there is such an abundant deposit of tubercles, why is there not more dullness on percussion? It is because the tubercles are very generally distributed "in the sheaths of the arterioles, the sheaths of the bronchial filaments, and in the lymphatic vessels." Therefore, the alveoli and bronchi maintain, to a large degree, their distended and expansile condition. Hence, resonance is afforded on percussion. On the other hand, in chronic tuberculosis the tubercular deposit is generally localized, and is followed in time by inflammatory changes, caseous degeneration and extensive infiltration, all of which causes solidification of the parenchyma. Hence, it is common to find circumscribed areas of dullness in chronic tuberculosis.

In regard to physical examination in acute miliary tuberculosis, Niemeyer declared that the most persistent examination of the chest reveals nowhere that the substance of the lung is infiltrated. And upon the same subject, Ruehle said that in particular, there is seldom noticed any abnormity in the percussion note; at most, only some impairment of the tone at various parts of

the chest, as compared with the corresponding situation on the other side, or a slight tympanitic quality, changes which are not constant, but alternate on repeated examinations. Moreover, the same author goes on to say that there is no single symptom nor group of symptoms sufficiently distinctive to make the existence of acute miliary tuberculosis a necessary inference during life. The certainty of the diagnosis can only be approximative.

The latter statement, however, will not apply in every instance. The disease presents an ensemble of symptoms which, by one who has studied and carefully watched one or more cases, will hardly be mistaken. The writer remembers with pleasure, how rapidly and certainly his distinguished teacher of physical diagnosis, Dr. Bruen, of the University of Pennsylvania, diagnosed the case in hand. The diagnosis was in no sense approximative, but was positive, and from the first was verified at the post-mortem.

During the earlier stages of acute tuberculosis the diseases most likely to be suggested to the mind by the appearance of the patient are intermittent fever, catharrhal pneumonia and typhoid fever. It is believed, however, that an observation of the following differential points will tend to aid in establishing a correct diagnosis :—

Acute Miliary Tuberculosis.	*Intermittent Fever.*
1. Chills occur at irregular periods.	1. Chills occur periodically.
2. Fever remittent in character, and not influenced by treatment.	2. Fever intermits and yields to treatment.
3. Pulse rapid and weak, with tendency to increase.	3. Pulse rapid and full during fever, and then subsides.
4. Temperature constantly elevated, with variations between 100 and 104.	4. Temperature characterized by extreme changes.
5. Marked disturbances of respiration.	5. No disturbance of respiration, as a rule.
Acute Miliary Tuberculosis.	*Pneumonitis.*
1. Onset gradual.	1. Onset rapid.
2 Chills frequent and more or less persistent.	2. Usually one severe chill followed by more or less chilly sensations.
3. Temperature runs up gradually, never extremely high, subject to remissions.	3. Temperature rises very rapidly to about 104, continues high for a few days and then begins to decline.
4. Irregular sweats are a common symptom.	4 Sweating is more or less frequent, and continuous in some cases.
5. Pulse rapid and weak from the first.	5. Pulse rapid but full and strong during first stages
6. Cyanosis and lividity a prominent symptom, but most marked during the later stages.	6. Cyanosis or flushing a common symptom early in the disease.
7. Rapid breathing a marked symptom.	7. Rapid and shallow breathing a marked symptom.
8. No soreness or pain in the lung.	8. Usually more or less pain.
9. As a rule, no dullness on percussion.	9. Dullness sooner or later over a portion of one or both lungs.
10. Crepitant or coarse bronchial râles may or may not be present at first, but frequently appear during the later stages of the disease.	10. Crepitant and subcrepitant râles; mucous and submucous râles in the larger tubes, appearing within the first 24 or 48 hours.
11. More or less cough and expectoration generally present.	11. Cough a marked symptom. Expectoration becomes abundant, sputa often discolored.
Acute Miliary Tuberculosis.	*Typhoid Fever.*
1. Onset gradual.	1. Onset gradual.
2. Frequent chills.	2. Usually a chill followed by chilly sensations.
3. Possibly more or less headache.	3. Headache generally complained of.
4. Mental disturbance and delirium not the rule, but may occur.	4. Mental disturbance and delirium a common symptom.
5. No epistaxis.	5. Epistaxis a common symptom.
6. Tongue usually dry and coated.	6. Tongue dry and coated.
7. Bowels may or may not be normal.	7. Bowels generally loose. Exceptionally, constipation may exist.
8. No abdominal tenderness or tympany.	8. Abdominal tenderness and tympany.
9. Temperature rises gradually, and there may be evening exacerbations and morning declines.	9. Temperature rises gradually, and generally has a regular evening exacerbation and morning decline.
10. Râles are generally present sooner or later.	10. Râles are frequently present, sooner or later.
11. Breathing soon becomes rapid and so continues.	11. Breathing but slightly if any changed, unless complication supervenes.
12. Pulse rapid and weak.	12. Pulse rapid and weak.
13. Generally either marked cyanosis or lividity is a common symptom.	13. Cyanosis not often present.
14. More or less profuse sweats a common symptom.	14. More or less sweating in about half the cases; in the other half the skin is hot and dry.
15. No eruption.	15. Eruption may appear after seventh day.
16. Subsultus tendinum may exist.	16. Subsultus tendinum may exist.

Of course, the above distinctions are merely approximative, and therefore will be more markedly defined in some cases than they will be in others. As is generally admitted, one of the peculiarities of the disease in question is its similarity to several others, and hence there is a wide range of variability in symptoms. Indeed, Bartholow, in summarizing the great similarity between some cases of acute miliary tuberculosis and typhoid fever, says as follows: "The cases, as a rule, present a striking analogy to typhoid, not only in the symptoms as described but in the physiognomy of the patient, the decubitus, the utter prostration, and in the course of the disease."

The basis of the diagnosis of acute miliary tuberculosis must rest on the marked evidences of some serious intra-thoracic disease, as shown by the rapid breathing, the cough and expectoration, and the general bad condition of the patient. On the other hand, the diseases to which it presents a striking analogy must be excluded by "negative information."

The prognosis of the disease is death. The duration, on an average, is about five weeks. The

patient perishes from the destructive fever process and the tubercular obstruction which prevents the due oxygenation of the blood. Perhaps no better idea of the rapidity of the disease and the appearance of the patient could be obtained than is conveyed by a recorded description of a case by that matchless clinician, Trousseau.

"On the 2d of February 1861, my colleague, Dr. Barth, and I were sent for to Les Ooiséaux Convent, to see a young Spanish lady, sixteen years of age. Her ordinary medical attendant, Dr. Vosseur, informed us that this young lady had, a fortnight previously, begun to have uncomfortable feelings and to suffer from fever, without experiencing any local symptoms, excepting decided oppression in breathing. As the symptoms continued, Dr. Barth was sent for, eight days later; at that visit he was struck with the lividity of the lips and face; the lividity extended to both hands. There was great oppression of breathing and ardent fever. Nothing abnormal could be detected by the most careful auscultation; there was neither râle nor the sound of prolonged expiration. The functions of the stomach were as well performed as it were possible to desire. Eight days after that visit of Dr. Barth, I again met him in consultation on the case. There was then extreme frequency of pulse and respiration and a frightful increase in the lividity of the skin. During the night the patient had had insomnia and some raving. Throughout the whole extent of the left lung we heard very fine subcrepitant râles, mingled with mucous râles; there was no expectoration. She died on the 4h of February, seventeen or eighteen days from the beginning of the attack."

Authorities referred to: Niemeyer's Practical Medicine; Flint, Practice of Medicine; Trousseau's Clinical Medicine; Bartholow's Practice of Medicine; Ziemssen's Cyclopædia of Medicine; Bruen, *Medical Record*, January 22d, 1881.

Editorial Department.

Periscope.

Bald Tinea Tonsurans.

Dr. Liveing writes to the *British Medical Journal* as follows:—

On several occasions I have called attention to the occurrence of smooth, bald patches in tinea tonsurans, exactly resembling alopecia areata. I have also mentioned the fact that when, in these cases, one patch becomes quite bald, the others quickly follow suit. A remarkable example of this has lately come under my observation. Two brothers have been under my care for some time past, with ordinary well marked tinea tonsurans, with abundance of the trichophyton. Their parents objected to vigorous treatment, and therefore mild remedies only have been used, which have not at any time produced the slightest soreness. The elder boy had six or seven separate spots of tinea tonsurans, and, during the last fortnight, every one of these spots, great and small, have become perfectly bald, smooth, and shining, with a well defined margin of healthy hair. What I wish especially to call attention to is (1) the suddenness of the change, (2) that the bald spots are strictly confined to patches previously affected with tinea tonsurans, not a trace of baldness existing on any other part of the head. In this instance there is not a stump nor a hair to be found, though, when I previously saw him, the patches were thickly covered with stumps and hairs. In other cases of this kind that I have met with, it has been generally possible to find one or two stumps left, either on or at the margin of the patch, by the microscopic examination of which the nature of the case could be determined. When the baldness is as perfect as it is in this instance, we may probably regard it as a spontaneous cure. In the younger boy the tinea tonsurans has run an ordinary course. It is somewhat difficult to say whether we should regard a case of this kind as one of true alopecia areata following on tinea tonsurans, or as a peculiar and exceptional feature in tinea tonsurans itself. Nor do I think the question of much importance, provided we remember that infection is not always removed; or, in other words, that the denudation is not in every case so complete as to remove all the stumps affected with the *Trichophyton tonsurans*. A want of knowledge of this fact has, in past times, led to two mistakes; the one, that alopecia areata is a *parasitic* disease; and the other, that it is *occasionally contagious*.

It has been pointed out by several observers that in almost all chronic scaly affections of the skin one can, by a diligent examination of the scales under the microscope, find the spores of a vegetable parasite, commonly called *Torula vulgaris*. I can confirm this from my own observations. This parasite is quite harmless, and is rather a consequence than a cause of the disease.

Red Sweat.

The *Lancet* says: It has long been suspected that the red as well as the blue color occasionally observed in perspiration is due to the presence of bacteria. In a woman whose sweat, especially in the axillæ, had a red tinge, Hofmnan, in

1873, found that uniform red masses adhered to the hairs, but he did not ascertain their nature. Pick observed in a peculiar case of skin disease reddish masses of bacteria on the hairs. Eberth noticed bacteria in yellow sweat. Additional observations of the same kind have been reported by Babesiu, of Pesth. A woman twenty six years of age presented pale red sweat in the right axilla, where the skin and hair were also slightly reddened. From time to time the perspiration became blood-red in color, associated with hysterical and nervous disturbances. A sister who slept with her also became affected in similar manner, the perspiration in the right axilla becoming red. A third case presented itself in a young healthy man, who complained of occasional blood-red sweat; and a fourth in a young woman. In all the symptom was associated with troublesome itching. Microscopical investigation yielded in all the cases a similar result. The hairs of the axilla were thin, pale-red, brittle, and surrounded with a colloid-looking, rusty or bright red sheath, in places of considerable thickness, and having a rough surface. It consisted of red masses presenting a radiating striation, more or less confluent, apparently proceeding from fibres of the cortex of the hair or from some broken part of its surface. The radiating striation was found to be due to the aggregation of round or ovoid bacteria, scarcely a micro-millimeter in diameter, which were united in zoogloea masses by a reddish intermediate substance. Nodular swellings on the hair were produced by an infiltration of the organism between the separated fibrils. The roots of the hair were free from bacteria. The red tint of the sweat was found to depend upon numerous roundish masses of zoogloea, resembling those of Bacterium prodigiosum. The bacteria were deeply colored by anilin and hæmatoxylin, and were rendered more distinct on the addition of acetic acid or liquor potassii, while the zoogloea shrank under the influence of alcohol, ether, and turpentine. Sulphuric acid changed the red color to violet, and then to violet blue. In sterilized culture solutions the bacteria multiplied slowly. The conclusions drawn from these observations are that the red sweat often found in the axilla is colored by a sphero-bacterium, the development of which gives rise to an excessive perspiration, and sometimes to brittleness of the hair, itching, and slight tinting of the skin. The red sweat appears to be contagious. The bacteria resemble, on the one hand, the colorless zoogloea found in hair, and, on the other, certain chromogenous bacteria, especially B. prodigiosum, from which it is distinguished by the brick-red color of the intermediate substance. It is more difficult to cultivate than B. prodigiosum, but gives essentially the same chemical reactions.

—M. Schlagdenhauffen, of Nancy, has studied the seed of an African plant known by the name of la pola. Its cotyledons contain caffeine and tannin. The Arabs use it to improve impure water. M. Schlagdenhauffen, in a note from him read at a meeting of the Académie des Sciences, stated that he considers la pola may rank in utility with tea and coffee.

Reviews and Book Notices.

NOTES ON CURRENT MEDICAL LITERATURE.

——Address in Hygiene. By Benjamin Lee, M.D., PH.D., Philadelphia. Extracted from the Transactions of the Medical Society of the State of Pennsylvania for 1881.

——Review of the Drug Trade of New York for the year 1881. Prepared by D. C. Robbins Esq., for the twenty-fourth annual report of the Chamber of Commerce of New York State.

——An analysis of seven hundred and fifteen consecutive cases of skin disease, by H. W. Stelwagon, M.D., comes to us in the form of a reprint. This is a very interesting article for dermatologists.

——A case of Basedow's Disease, terminating in total loss of sight from (neuro-paralytic) inflammation of the cornea, by Henry G. Cornwell, M.D., of Columbus, Ohio, comes to us as a reprint from the *American Journal of the Medical Sciences*, October, 1880.

——Intermittent Spinal Paralysis, of Malarial Origin. By V. P. Gibney, A.M., M D. Reprinted from the *American Journal of Neurology and Psychiatry*. The author concludes "that there may be spinal paralysis affecting one side or a single member, clearly traceable to malarial poisoning. They are not numerous, however. If nervous diseases are increasing, as many authorities claim, may we not expect to find the cerebro-spinal axis the more readily and the more frequently influenced by malarial poisoning, just as we find now the nerves so commonly affected?"

BOOK NOTICES.

Lectures on Diseases of Children. A Handbook for Physicians and Students. By Dr. Edward Henoch, Director of the Clinic and Polyclinic for Diseases of Children, in the Royal Charité, and Professor in the University of Berlin. pp. 357. New York: William Wood & Company, 1882.

This volume constitutes the March number of the well known "Wood's Library of Standard Medical Authors." This treatise is based upon a most extensive experience of thirty-seven years. Throughout the work the author makes frequent reference to a list of prescriptions at the end. This is done principally to aid young physicians just commencing to practice among children. Unfortunately these prescriptions are written in the metric system, which is comparatively unfamiliar to the mass of the profession in this country. It is otherwise a good book, and to be highly recommended.

THE

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SUBPŒNAS TO MEDICAL MEN.

This is a subject for the consideration both of the jurist and the physician. A subpœna to any one must always be obeyed, and its disregard, considered contempt of court, is usually severely punished. In the majority of cases this is eminently just and commendable. The merchant, the lawyer, the gentleman of fashion and the *loafer* can obey a subpœna without any detriment to his own welfare or to that of any one else. The case, however, is oftentimes far different with the physician. Suppose he has been subpœnaed to appear in court on a certain day at ten o'clock. He may be called at seven or eight o'clock of the same day to a case of labor, and when half-past nine o'clock comes his patient may be suffering from post-partum hemorrhage, when to leave her would be to insure her death. Of course, we doubt not that, in such an extreme case, the court would deal leniently with the delinquent, but such would depend very much on the character of the particular judge, and since these men are only human, we can readily conceive that even under such pressing circumstances and with such ample excuse, there would be found judges ready to inflict the severest penalty on the physician. Such ought not to be the case, for two reasons.

1st. It would be unjust to punish a man for neglecting a lesser to perform a greater duty.

2d. It is a temptation for some men to neglect a duty, for the neglect of which they *may* not be held responsible, to fulfill one, for the neglect of which the punishment stares them in the face.

It would be well to have this matter clearly understood. Physicians are, by law, on account of the pressing necessities of their professional duties, exempted from jury duty; so ought they likewise to be exempted from subpœnas, when it can be shown that attendance in court as a witness will redound to their own and their patients' disadvantage. Witnesses are often compelled to remain idly in court for hours. Physicians in active practice cannot afford to waste this time. Of course, there are certain criminal cases in which the evidence of the physician is absolutely essential, but in such trials his convenience ought to be consulted, and he ought to be most liberally rewarded. In civil suits he ought not to be forced to neglect his patients. These few words are intended to direct thought and to turn legislative energy in this direction.

INSANITY FROM DRUGS.

We take pleasure in calling attention to a circular from Dr. H. H. Kane, which appears in another column. His object is a most worthy one. No doubt many cases of insanity are directly traceable to the abuse of strong and powerful drugs, and it will be of great interest to the profession to have reliable statistics on this subject. We would, therefore, earnestly commend this circular to all physicians, and strongly urge them to answer the questions contained therein to the best of their ability. By so doing they will advance science; and to advance medical science ought and *must* be not only the duty, but the pleasure of every true physician. Therefore, we would urge all our readers to be prompt in answering this circular.

News and Miscellany.

Medical Society of the State of Pennsylvania.

THIRTY-THIRD ANNUAL SESSION.

Pursuant to adjournment, the Society met in Battery Armory, Titusville, Pa., May 10th, at 10 A.M., and was called to order by the President, Dr. Jacob L. Ziegler.

Prayer was offered by the Rev. Dr. Henry Purdon, after which the list of delegates was read by Dr. Wm. B. Atkinson. Dr. Geo. O. Moody, of Titusville, then delivered the

Address of Welcome.

Mr. President and Gentlemen of the Pennsylvania State Medical Society:—

It will ever be a pleasant reminiscence that the honor of greeting you on this your first meeting in Crawford County has been assigned to me. As the representative of the Crawford County Medical Society, I am to welcome you as an organized body of workers in the broad field of theoretical and practical medicine. As the representative of the citizens of Titusville, Pa., I am to welcome you individually, trusting that your brief visit among us will not be entirely destitute of social enjoyment, and confident that our own anticipation of pleasure and profit will be fully realized.

We can present to you, gentlemen, for your admiration, no ancient historical records of our city, whose history has not been written—we trust not yet lived. We can point you to no enchanting natural scenery to delight the eye, no fine architectural designs nor rare gems of art, to please the æsthetical taste. Were you here only in pursuit of recreation and pleasure, these would be fatal defects. We are told that travelers in foreign lands are wont to go into ecstacy at the sight of ancient ruins. If modern ruins will answer your purpose you shall have a free show, and can feast the eye to the heart's content. But neither our modern ruins nor our want of natural scenery and institutions of public interest will deter us from giving the most profound attention to your words of wisdom, feeling, as we do, that the chief object of your meeting here is to reëxamine the past history and present condition of medicine, to place on record whatever has been proven and found valuable, and to reject whatever has failed to stand the crucial test of scientific research and practical experience. You are also to reach out into the unexplored regions of physiology, pathology, surgery, therapeutics, and all the branches, direct or collateral, of our profession, to gather in new facts and develop new theories, in their turn to be proven true or false by future investigations.

Our profession has a right to demand of all such organizations as this, that at every meeting it shall add something to its fund of scientific and practical knowledge, should help to mark the boundaries of its established truths and elevate it to the dignity of a fixed science.

But we are not medical men *only*, nor is the debt we owe due *alone* to our profession. That power from which our Society has derived its corporate privileges has a right to our allegiance and to demand from us, for the public good, a knowledge of those sanitary laws necessary to protect the public health and add to the sum of human life. So also does that Higher Law—the source of all human law—make it incumbent upon us, not only to heal the diseases and relieve the sufferings of our fellow creatures, but to warn the masses throughout the State, and especially those in whose midst the Society meets from year to year, where they are to look for and how contend against those unseen pestiferous poisons, which, like the breath of the deadly upas, silently creep into the homes and bedchambers of their unconscious victims, filling our land with the lamentations of Rachels, and entailing upon thousands a life of disease and misery. The education of the people in hygienic and sanitary laws becomes more and more imperative, as, year by year, preventive medicine advances to the front, and becomes the pioneer of the curative art. If we are not our brothers' keepers, the day is not far distant when an enlightened public opinion will demand of us, as the conservators of the public health, that we so instruct our brothers and fellow citizens as to enable them to be their own keepers and the keepers of those whom nature's law has placed under their protection. Confident, from the past history of our Society, that it will not neglect its duties to the medical profession, I sincerely trust a voice will go out from this meeting upon the importance of the proper construction, ventilation, heating, and sewerage of our homes, so strong and so clear, that it will be heard and heeded by every inhabitant of our country. Again, gentlemen, allow me to bid you a hearty welcome, and a God speed in the work before you.

The committee of arrangements then presented their report, after which followed the introduction of delegates from other Societies and of visitors not delegates.

Report of Delegates to other Societies.

Dr. Laurence Turnbull, of Philadelphia, presented a written report of his visit as a delegate to the Centennial Meeting of the Massachusetts Medical Society, at Boston, June 7th, 1881.

The meeting was one of great interest, and Dr. Turnbull alluded to the valuable historical address of Dr. Samuel A. Green, now the efficient mayor of that city. He also gave an abstract of the address of President Eliot, of Harvard University; and the able reply of Dr. Williams, the distinguished ophthalmologist, President of the Massachusetts Medical Society, in which he returned thanks for the graceful hospitality extended to them. He also stated that it was owing to the fostering care and willing coöperation of the college with the Society that the standard of education in the medical school has been kept so high. One of the most instructive features of the celebration was the exhibition of instruments, apparatus, books and medicines, dating from the fifteenth century up to the present day. But the crowning event was the centennial anniversary exercises, which included addresses and a splendid poem by the renowned Oliver Wendell Holmes.

After which the ordinary routine business as per programme was transacted. (See Reporter, April 15th.)

MAY 10th, 2. P. M.

After the transaction of the routine business, the address in Surgery was delivered by Dr. H. L. Orth, of Harrisburg. A paper on Gheel was read by Dr. S. S. Schultz, of Danville. Following this came a paper on

The Oleates and Oleo-Palmitates in Skin Diseases,

read by John V. Shoemaker, A.M., M.D., of Philadelphia, Physician in charge to the American Hospital for Skin Diseases, etc.

At the meeting of the Society, in 1879, Dr. Shoemaker called attention to the oleates for dermic medication, and spoke at length upon the great value that they possessed over the *ordinary* ointments then in general use.

Dr. Lawrence Wolff, of Philadelphia, has found the best and most ready method for preparing oleates by the double decomposition of sodium oleate with solutions of neutral salts, and as a general method of their manufacture, proposes the preparation of the former by a saponification of oleic acid with a solution of sodium hydrate. A solution thereof, in eight parts of water, is precipitated by the salt required; the precipitate, washed and dried, thus yields the oleate required. Of the manner of preparing each individual one, he shall speak under their respective headings.

The oleates of mercury, atropia, quinia and antimony, with their therapeutical action, were considered, and Dr. Shoemaker claimed to have first introduced the oleates of lead and bismuth, in 1879, before the Society. The author also brought forward and showed for the first time the following oleates:—

OLEATE OF ZINC.

Oleate of zinc is made by decomposing a sodium oleate, with a saturated solution of zinc sulphate, boiling out and drying the precipitate and then reducing it to an impalpable powder, which is rapidly accomplished. One part thereof melted with three parts of a fatty vehicle, yields the ointment he has been in the habit of using. He has, however, obtained the very best results with the oleate of zinc alone, and not mixed with a fatty diluent; which is a fine pearl-colored powder, with a soft-soapy feel, very much like powdered French chalk.

When dusted over a denuded surface, it will have, by the combination of the oleic acid and zinc, a stimulating as well as astringent action. It is, *par excellence*, the remedy for excessive sweating, or in cases of hyperidrosis and osmidrosis. I have used it for more than a year, dusted over the surface, in patients suffering from an increased flow of sweat about the palmar and plantar surfaces, and around the axilla and genitalia. It has relieved and permanently cured some of the most distressing cases suffering with excessive secretion about the feet, in which the epidermis had macerated and peeled away, leaving a tender and exposed skin, and giving rise to a very disagreeable odor. It is likewise most efficacious as a lady's toilet powder, particularly to those who are afflicted with shining faces in the summer, called seborrhœa oleosa. It is the most valuable and the most reliable remedy in that commonest variety of eczema known as eczema vesiculosum. He has witnessed, and also those who have been in attendance in his clinics during the past winter, marvelous results from dusting this oleate over those on whom the extremities and even the trunk had been covered with small vesicles, swollen, hot, inflamed, the parts constantly weeping, and the itching so intense that the patient would rub and scratch the surface until it had become perfectly raw; in such cases he has frequently seen the discharge dry up, the swollen and inflamed skin resume its normal condition, by the threefold action of the oleate in protecting, stimulating and astringing the parts. If this oleate be dusted on an inflamed surface that is hot and tumid, such as is found in erythema about the groins and axillæ, and in herpes, particularly of the genitals, it will cling to the skin, and will not fall or brush off like ordinary dusting powders. These advantages prove, beyond a doubt, the superiority of the oleate of zinc over the ordinary ointments and powders in the class of skin eruptions he has just named.

OLEATE OF COPPER.

Copper oleate is obtained in a similar manner, by double decomposition with a saturated solution of copper sulphate. The washed precipitate melted with either four or nine parts of cosmoline, fat, or lard, gives respectively a twenty or ten per cent. of oleate of copper ointment.

When applied to the unbroken skin, the oleate of copper ointment rapidly penetrates deeply into the parts, particularly into the follicles, and will produce slight stimulation. On the other hand, if brought into contact with broken skin which it stimulates, an insoluble albuminate is formed, which coats over the surface and supplies the place of the abraded skin.

The most successful results that he has had with the ointment of the oleate of copper has been in rapidly curing cases of ringworm. He directs it to be used in the following manner, both in ringworm of the scalp or body: The parts should be first washed with soap and water, and in case the hairs be involved, the hair should be cut short, and after drying, a small piece of the ointment of this oleate, in proportion to the size of the patch, should be lightly rubbed on the surface. The same procedure should be repeated night and morning, until all trace of the disease had disappeared; the parts should only be washed about once in ten or twelve days, as the too frequent use of water may prevent the oleate from penetrating to the lowest depths of the follicle in order to successfully destroy the fungus. It may also be necessary to pluck out the diseased hairs, or epilate, in very inveterate cases, although he has cured some without being compelled to get rid of the diseased hairs in this manner. If this method is carefully followed, the oleate just named will no doubt effect a complete cure in some of the most obstinate cases. He has also used this ointment, spread on old muslin, for indolent ulcerating surfaces; and has found it an excellent cleanser and healer. It acts by condensing the tissues, and constringing the blood vessels, and thus lessens the determination of blood to the part. It will relieve, and some of his patients have reported cures from its application to, hard and horny warts, corns and bunions.

OLEATE OF ALUMINIUM.

Aluminium oleate is also prepared by decomposing sodium oleate with aluminium sulphate; the washed precipitate mixed with equal parts of lard gives the ointment of aluminium oleate he shall speak of.

The ointment thus prepared is semi-solid, dark brown in color, and having a most powerful astringent action. It has the most decided action of all the other oleates in checking muco-purulent discharges that occur in one of the varieties of eczema. For this purpose it can be applied with advantage around the arms, groin or buttock of those who have excessive discharge from the friction of those parts—particularly in children and infants—and so check the profuse secretion or bring the parts into a suitable state for other remedies. It can also be employed with success as a dressing in foul ulcers, abscesses, sinuses, burns, and scalds, from its power to coagulate albumen, constringe the vessels, by its anti-styptic action, and check or correct the secretion of muco pus.

OLEATE OF IRON.

Iron oleate: precipitate with ferrous sulphate from sodium oleate on boiling is soon converted into ferric oleate; and as such may either be used pure, or if mixed with an equal amount of a fatty base, as his ointment of iron oleate.

When prepared in the above manner, it occurs in a reddish-brown paste, inodorous, having a styptic taste, and readily soluble in fats, which hold in combination about 30 per cent. of the oxide of iron; forming a powerful and important therapeutic remedy. It is free from local irritation when used topically, but when brought in contact with an ulcerating surface it has a very mild astringent action. It can, therefore, be used, as he has tested it, both for a constitutional and local effect. He has already had some excellent constitutional (systemic) results, having a small piece of this ointment rubbed in the axillæ and inguinal regions, two or three times a day. The effect of this ointment has been very good on some upon whom he has applied it, who had a deranged state of the digestive organs, and inability to bear the ordinary chalybeates, weak pulse, and a pale and flabby condition of the skin. He has also been using it with marked effect in some cases of scrofula. He is now testing its therapeutic action, not only in cutaneous affections but also in many other diseases, from which he expects shortly to hear favorable and satisfactory results. It will no doubt take the place of other chalybeates—particularly when the latter are not well borne by the digestive organs—and will probably constitute one of the best constitutional tonic and local astringent remedies.

OLEATE OF ARSENIC.

Arsenicum oleate must be derived by making arsenious chloride by the cautious saturation of hydrochloric acid with arsenicum metal. The solution thus obtained, precipitate from sodium oleate the oleate required, which he employs in the quantity of twenty grains to one ounce of fatty base, as his ointment of arsenicum oleate. It is in this form a soft, yellowish ointment, having no action on the skin, except when abraded or in wounds, ulcerating and granulating surfaces, in which condition it will excite active inflammation and destroy the tissues of the part to some depth. In lupus, especially the ulcerating varieties, the constant application of the ointment of arsenicum oleate will destroy cell infiltration in a mild, and in a comparatively painless manner. It may be applied with almost as good result in the tubercular form of lupus, providing the parts be thoroughly scraped, so as to bring the oleate in contact with an abraded surface, which will greatly enhance its action. It can be used very satisfactorily in the ulcerating variety of epithelioma, and will be better borne for a longer period to the parts than any other form of arsenic. He has likewise employed it after puncturing or scraping the surface to destroy warts, condylomata, nævi corns, horns and old granulations. In some instances he has incorporated in this oleate, with a very happy effect, opium, belladonna, hyoscyamus and arnica.

OLEATE OF SILVER.

This new oleate, like the others, is prepared by precipitating the sodium oleate with a saturated solution of silver nitrate, washing the precipitate with boiling water, and drying it, after which it is reduced, like the zinc oleate, to a fine powder. One drachm of this dissolved in an ounce of fatty vehicle forms what he has employed as ointment of silver oleate. Made in this manner, it occurs as a pulverulent salt, of brownish-yellow color, which, if mixed with lard in the proportion of from ten to sixty grains of the oleate of silver to one ounce of lard, forms a dark brown, soft and pliable ointment.

This oleate in its natural form, sprinkled over old chronic ulcers, bed sores, and exuberant granulations, will set up a healthy state in the parts. The best effects he has experienced from using the ointment of this oleate, which not only coats over an abraded surface by combining with the albumen, and so protecting it from the air, but it also causes powerful contraction of the blood vessels, and thus condenses the tissues. It is a safe and efficacious remedy in erysipelas, and can be used either around the margins, to prevent the inflammation from extending, or can be applied weak, ten to twenty grains to one ounce of lard, over the inflamed surface. It has reduced the active inflammation by being constantly applied in several cases of superficial varieties of lupus. It will be serviceable applied to boils, and carbuncles, and may often arrest pustulation in its early stage. An intolerable itching that sometimes occurs in the meatus auditorius, the anus, and the genitalia, may often be quickly relieved by applying the ointment either alone or combined with opium and belladonna. The advantages that the ointment of oleate of silver possesses over the ordinary silver ointments, are its stability and prompt action, and by being less painful and milder in its curative manner, but still penetrating deeper into the affected part.

The oleates of magnesium, lithium, calcium, antimony, tin and others, are also readily made by similar processes, but are at present of little therapeutic value as far as dermic medication is concerned, and are mentioned only for the benefit they may ultimately prove for internal exhibition.

While his experiments with these new prepara-

tions cover a period of almost two years, their efficacy and application in the treatment of dermic affections he does not claim yet as having exhausted; and while daily he finds new and valuable use for them, he will not speak of them further at this time, when they are still in their experimental stage, and would court the trial of them by other practitioners, and communications from them as to their results.

He has thus, in a brief and practical manner, endeavored to describe for the first time the therapeutic action of chemically true oleates; although he brought forward some of the same preparations before the Society in 1879.

A few years prior to that period, Mr. John Marshall, of England, published a paper on the treatment of persistent inflammations by the local applications of solutions of oxide of mercury and morphia in oleic acid. It will be observed, however, that these preparations, too, were only solutions, and not the true oleated compounds that he has just considered. While, therefore, the credit is due to Mr. Marshall for suggesting the oleic solutions referred to, Dr. Shoemaker claims to have first used the true chemical oleates, and to have used and published an account of the oleates of lead and bismuth (*See Transactions of State Medical Society of Penn'a. for* 1879), long before a description of these oleates were published and claimed by some of the foreign journals for Drs. Crocker and McCall Anderson.

The oleates in the form in which he has shown enjoy the widest range of therapeutic application. The superior advantages which they possess over the ordinary ointments, he considered under the following five heads:—

First. Their deep penetration. Second. Their freedom from rancidity. Thirdly. Their cleanliness of application. Fourthly. Their great economy, and Fifthly. Their antiseptic action.

Firstly. Their deep penetration. The oleic acid in their combination gives them active solvent powers and facility and ability to penetrate rapidly into the animal tissue, while rendering any chemical ingredient with which it is combined more active and effective in dermic medication.

Secondly. Their freedom from rancidity. The same acid held in the combination will always keep the fat—with which the oleate is mixed—pure, sweet, and free from rancidity.

Thirdly. Their cleanliness of application. The rapid absorption of the oleate into the tissue will prevent any unpleasant disfigurement of the parts, will not stain the linen, and will give comfort and ease in their application.

Fourthly. Their great economy. The oleate should not be rubbed in vigorously, like the ordinary mechanical ointments, which require considerable friction; they only require to be lightly smeared or applied over the surface in very small quantities, hence their great economy.

Fifthly. Their antiseptic action. The oleic acid in combination has also a most happy and effective action in rendering the oleates antiseptic or deodorant upon all discharges and suppurating surfaces.

A great drawback, however, to the general adoption of the oleates, will be the lack of knowledge that the majority of pharmaceutical chemists have, at the present time, of their manufacture. Thus the Doctor will often prescribe a certain oleate, and be surprised to see no change in his patient, but after careful investigation, which he has made in several instances by having the patient bring him the oleate, he has found either a substitute or an oleic solution in place of the remedy ordered. Again, it has been his misfortune to have some pharmaceutical chemists decry the action of the oleate to his patient, and from these persons he has learned that they knew nothing whatever about their manufacture. An ordinary mechanical ointment, full of lumps, was easier mixed, in the old stereotyped manner, or a spatula full of a petroleum product incorporated with some metal, was their ideal of a proper kind of a salve that should be used and would be efficacious. You will, nevertheless, find good, honest and straightforward chemists, who, if they do not understand the manufacture of the oleates will procure them for you; or will go to work and make them; but always examine their products and see that they possess all the physical properties which he showed in the excellent specimens of true and staple oleates.

This was followed by a paper on "Medicine, and Something More," by Dr. Traill Green, of Easton.

Dr. E. E. Montgomery, of Philadelphia, then read a paper on

Procidentia

and its relief, in which, after reviewing the opinion of authorities upon the true uterine support, he assumed that the vagina was the support in the normal condition, and the ligaments nature's reserve forces.

Prolapse occurs as a result of three conditions: 1st, pressure from above; 2d, increased weight of uterus; and 3d, want of support below. The most potent agents in its production are, engorgement of the uterus, frequent labor, laborious exercise, early resumption of domestic duties, neglect of laceration of perineum, and the frequent use of a widely expanding bivalve speculum.

There are three stages: 1st, simple descent; 2d, incomplete prolapse; and 3d, complete prolapse or procidentia.

The earlier symptoms are, pain in back and limbs; bearing down, burning pain in pelvis and groins, and sensation of pressure upon fundament, followed later by vesical and rectal distress and tumor at the vulva.

Procidentia is distressing, from friction against clothing and limbs, and from being bathed with urine, often producing ulceration. The indications for treatment are, first, to replace the uterus, and second, to prevent the recurrence of the disorder. The latter comprises mechanical and surgical measures. The mechanical support is by means of pessaries, which are unpleasant, ineffective, and not without danger. In reviewing the various surgical measures proposed, he claims that they all, with the exception of LeFort's, fail to give permanent relief, for two reasons: 1st, they do not elevate the uterus to its normal position and thus facilitate the absorption of hypertrophy and the atrophy which should occur with age; 2d, they do not afford sufficient support in the upper third of the vagina, allow the enlarged organ to sink like a wedge into the nar-

rowed canal, and by pressure cause the absorption of the tissue below, until it is again outside. These causes of failure are obviated by LeFort's operation, which, by constructing a bridge of tissue in the centre of the vagina, supports the uterus. It forms a double vagina. Tracy greatly improved the operation by restoring the perineum at the same time. The only drawback to its invariable performance is that the adhesion of the vaginal walls would greatly complicate delivery.

A case was given in which the operation was performed, which was entirely successful.

After which Dr. John G. Lee, of Philadelphia, read a paper on

Homicides,

in the course of which he said:—

No further back than 1836, a distinguished European scientist and statistician,* in publishing a work, wherein he endeavored to prove that the human race was placed under the influence of regular and periodic causes, affecting not merely its physical qualities, but likewise its actions, these leading to effects equally regular and periodic, made the statement that "Man is born, grows up, and dies, according to certain laws, which have never been properly investigated, either as a whole or in the mode of their mutual reactions." Such a criticism applied now-a-days to the advance of knowledge, and more especially medical science, would be neither true nor just. For in this era of universal progress no branch of science has advanced more rapidly than the study of medicine; gradually enlarging its fields of research, it has pressed into its service and brought under its dominion everything in nature which could aid in any degree whatsoever in its onward stride. Goaded into action by the ceaseless cries of suffering humanity, ardent and indefatigable men have never hesitated to come to the fore and enter the too often thankless career of scientific research; generously forgetful, in many instances, that the work so laboriously performed by them would only be of benefit to future generations, long after they themselves had fallen and perished by the wayside. Yet, though so much has been done, still more remains to be accomplished; to this end, all facts pertaining to the mental and physical existence of the human species are being made the subject of thoughtful study and careful investigation. And, among the many facts which have been attentively observed, the births, marriages and deaths occurring among given groups of population stand foremost in the interest which their study and the practical deductions therefrom have excited. Especially has the cessation of the organic and material life of individuals of the human race been considered a phenomenon of exceeding interest, and been made the subject of almost indefinite investigation, subdivision and classification. Nevertheless, but little work has been done concerning the mode of death to which this paper has the honor of calling your attention. Though indeed, the first death ever mentioned in the Christian history of the world is a violent death, a homicide, or if we read the annals right, a murder, feloniously committed, with malice aforethought.

* A. Suetelet, Sur. l' Homme et le developpment de *des facultés*, ou essai de physique sociale. Bruxelles, 1836.

After a prolonged study of the dark side of life in a great city, I feel convinced that the juxtaposition of wealth and misery, the forcible association of innocence with guilt, and the eternal shock of conflicting interests usual among large aggregations of men, all combine to wear off sooner the thin varnish of a hypocritical society, beneath which man to a certain extent masks his passions, and become important factors in the more or less continual frequent occurrence of criminal homicide in populous centres.

From December 31st, 1871, until January 1st, 1882, out of a total number of 12,936 cases of deaths investigated by the Coroner's office in Philadelphia, 323 cases were deaths from homicidal violence, falling under the Act of Assembly, previously quoted, or an approximate ratio of 27 homicides to every 1000 inquests. As the population of a city annually increases, so naturally the number of homicides might be expected to augment in a more or less similar ratio. Such, however, has not been the fact, as the following figures shows us:—

Years.	*Homicides.*	*Population.*	*Ratio of Homicides to 10,000 Population.*
1872	32	725,000	.44
1873	23	750,000	.30
1874	28	775,000	.35
1875	44	800,000	.55
1876	46	825,504	.55
1877	34	850,856	.39
1878	31	876,118	.35
1879	28	901,380	.31
1880	31	846,980	.36
1881	26	868,000	.29

In no case does the ratio appear to bear any relation to the population. In 1873, for instance, when the lowest number of homicides were committed, the ratio is .30 to 10,000 souls, as against a ratio of 55 for each of the years 1875 and '76, when the greatest number of homicides occurred. Examining into the frequency of homicide, according to color, we find that of the 323 persons who came to their death by criminal violence, at the hands of their fellow-men, 26 were colored people and 297 whites. Of the 26 colored persons, 20 were males, and 6 females, while of the 297 whites, 202 were males and 95 belonged to the weaker sex.

These deaths took place, according to years, in the following order:—

Years.	*Males.*	*Females.*	*Total.*
1872	22	10	32
1873	16	7	23
1874	19	9	28
1875	28	16	44
1876	40	6	46
1877	24	10	34
1878	20	11	31
1879	18	10	28
1880	17	14	31
1881	18	8	26
	222	101	323

The year 1876 showing 46, to 23 occurring in 1873, the males always exceeding the females; the general yearly average for both sexes together being 32.3, and the separate average by sexes, being for the males, 22.2, and 10.01 for the females.

Though, as might be expected, we find that deaths from criminal violence occur more frequently at the period of life when, the bodies and intellect of individuals of the human species being fully matured, their passions are most difficult to control. Yet, from the tenderest age up to far beyond the three-score years and ten usually allotted to human beings, we find men taking the lives of their fellow-creatures.

Period.	*Males.*	*Females.*	*Totals.*
Under 1 year,	15	16	31
1 to 5 years,	5	2	7
5 to 10	3	2	5
10 to 15	3	—	3
15 to 20	13	2	15
20 to 30	53	31	84
30 to 40	56	21	77
40 to 50	42	11	53
50 to 60	17	8	25
60 to 70	13	1	14
70 to 80	—	4	4
80 to 90	1	—	1
Age unknown,	1	3	4
	222	101	323

The highest number being reached between the ages of 20 to 30, and the next highest between 30 to 40 years, then between 40 to 50 years, in fact, just at the time when the struggle for superiority between members of the human family is at its maximum. The fewest lives were destroyed between the ages of 80 to 90 and from 5 to 15 years.

The mortality from homicide forms no exception to the rule proved by mortality tables in general, that the deaths of adults are slightly in excess of the deaths of the minors. There occured 262 violent killing of adults, to 61 deaths of minors; of the minors 39 were males and 22 females.

Figures relating to the condition in life of the victims, are but of passing interest to us; out of the 323, 174 are recorded as being married, 136 were in a state of single blessedness, while the condition of life of the remaining 13 was not determined. 126 of the 174 married persons were males and 48 were females; of the 136 unmarried, 90 were men and 46 women. No correct record of the nativity of those slain having been kept, we are, therefore, unfortunately, without data sufficiently accurate for use in this paper.

Of special interest to us, as physicians, are the anatomico-pathological causes of death, of which we have fourteen different varieties.

First. Homicide from violence, comprising blows, kicks, and other injuries of a contused character, inflicted with nature's weapons, foreign bodies or falls. Of these we have one hundred and twenty-six cases; one hundred and two of which occurred among men, and twenty-four among women. Entering into a more detailed account of the injuries described under this heading, the causes of death, arranged in their order of numerical frequency, were:—

From causes not defined	38
" fracture of the skull	30
" compression of the brain	24
" peritonitis	8
" inflammation and abscess of brain	7
" inflammation of lungs	6
From congestion of the brain	5
" injuries to the head	2
" rupture of the bladder	2
" erysipelas	2
" tetanus	2
" hemorrhage and shock	1
	126

Second. Death from gunshot wounds occurred in 66 cases, 55 of which were males and 12 females, the lesions being specified as follows:—

From causes not stated	37
" wounds of chest	6
" " " heart	6
" " " throat	4
" " " brain	4
" " " lungs	4
" " " abdomen	2
" " " back	2
" " " pulmonary artery	1
	66

Third. Fatal wounds from the use of cutting instruments were 53 in number, 41 being males and 12 females.

From causes not specified	11
" wounds of throat	8
" " " head	7
" " " chest	6
" " " peritoneum	6
" " " femoral artery	3
" " " subclavian artery	2
" " " heart	1
" " " heart and aorta	1
" " " aorta	1
" " " orbital artery	1
" " " ulnar artery	1
" " " crural vein	1
" " " groin	1
" " " arm	1
" " " leg	1
" " " back	1
" " " erysipelas	1
	53

Fourth. Criminal abortion was the cause of 32 deaths, 29 of the victims being recorded as females, the remaining 3 being males. In this form of violence, the deaths of the fœtus do not appear to have been taken into consideration, by the intelligent Coroner's jury, in those cases where the mother perished. Here it may be well to remark, that the crime of abortion does not come under the paragraph of the act of Assembly,* already quoted, but has been made the subject of a separate clause: "If any person shall unlawfully administer to any woman, pregnant or quick with child, or supposed and believed to be pregnant or quick with child, any drug, poison, or any substance whatsoever, or shall unlawfully use any instrument, or other means whatsoever, with the intent to procure the miscarriage of such woman, and such woman, or any child with which she may be quick, shall die in consequence of either of said unlawful acts, the person offending shall be guilty of a felony, and shall be sentenced to pay a fine, not exceeding $500, or to undergo an imprisonment, by

* Act of Assembly, 31st March, 1860.

separate or solitary confinement at labor, not exceeding seven years."

In the following 32 cases death occurred:—

From causes not specifically defined	18
" peritonitis	8
" hemorrhage	2
" violence in utero	2
" pyæmia	2
	32

Fifth. Of one of the most dangerous forms of homicide, the criminal administration of poison, there are only 18 cases recorded; though it can hardly be doubted that a certain number of instances of this variety of crime may either have escaped the notice of the investigating officials, or else have been passed as suicides or accidental poisonings; 7 of the victims were males, and the remaining 11 were females, the deaths resulting from the administration of the following poisons or drugs:—

Names of poison not given	2
Poisoning by chloroform	4
" arsenic	3
" laudanum	2
" alcohol	2
" opium	1
" sulphate of morphia	1
" corrosive sublimate	1
" muriatic acid	1
" podophyllin	1
	18

Sixth. In fourteen instances life was destroyed by suffocation, ten of the victims being males and four females.

Seventh. Of four persons who perished by strangulation, two were males and two females.

Eighth. Two men were found drowned, with such marks of violence upon them as to warrant the supposition that they had met with foul play.

Ninth. Two infants came to their death from criminal neglect.

Tenth. Two aged females were recorded as having been frightened to death.

Eleventh. One infant was starved to death.

Twelfth. One infant was thrown from a window.

Thirteenth. One drunken woman was saturated with coal oil by her insane husband and then set fire to.

Fourteenth. And lastly, one woman was feloniously assaulted, receiving such brutal treatment that she succumbed to the results of her injuries.

Going further into the subject, we find that massed in groups of months, homicides occurred during the past ten years, in the following order:

July	40.	January	26.
April	30.	June	26.
May	30.	November	24.
February	29.	December	23.
September	28.	October	22.
August	27.	March	18.

July, as we see, heading the list and March ending it; the difference, however, in the mortality of several of the intermediate months being so slight that but little importance need be attached to their order of succession in the foregoing table. Though we cannot help but notice that the majority of criminal killings occur in the warm months of the year. This conclusion becoming even more apparent if we examine into the frequency of homicide, by quarters. The deaths by quarters for the past ten years being as follows:

1st Quarter.	*2d Quarter.*	*3d Quarter.*	*4th Quarter.*
73	86	95	69

The 3d and 2d quarters heading the list here, and the 1st and 4th quarters ending it.

While general meteorological phenomena must undoubtedly exert a certain influence over the frequent taking of human life, what their special effects are we are not able to determine; all observations which we were enabled to make having been unsatisfactory in the extreme. Possibly future observations and comparisons, including a greater number of cases and extending over a longer period of time, may some day give us more definite results.

As an epilogue to the preceding figures, it is of interest to know that in only 5 instances was *lex talionis* enforced, and the supreme penalty exacted. During the decade over which our observations extend, only 5 criminals were executed. All 5 were males between the ages of 20 to 40 years; 2 were guilty of wife-murder; 1 destroyed his paramour, and the remaining 2 killed individuals of their own sex,

Glancing at this statistical compilation, the question naturally arises — what end may it serve? Or to what purpose it may be studied? Admitting that the impulsive actions excited by human passions are not subject to special rules and laws; we cannot but define them as being in themselves but the physiological manifestations of certain physical phenomena, which exert a disturbing influence over cerebral action. Thus, the intense cold of our winters, the torrid heat of our summers, combined with the bodily malnutrition, and the cerebral hyperæmia caused by the excessive use of stimulants, so commonly met with among our poorer classes, must all be factors of importance in the calling into existence of the columns of figures above enumerated, and their more or less constant fluctuations. It being now well known that proper hygienic police regulations not alone tend to diminish disease, but also act as a check upon vice and crime. Medical science has under charge, not alone the supervision over physical and mental disease, but it is more and more becoming the duty of this branch of knowledge to study the climacteric, hygienic, psychological, sociological and moral conditions under which man lives, with a view to remedying and preventing the ravages of disease. Why should not moral suasion and expostulation on the part of the medical adviser be combined with sedative treatment, in cases where an excited mind, the result of a hyperæmic cerebral condition, is apt to give way to the fatal hallucination of imaginary grievances? It is easy to see the power which medical men would be able to exercise over many such instances. Again, a proper moral education, with the development of the nobler qualities of human nature, would more and more tend to render impossible and infrequent those most unnatural crimes—abortion and infanticide; cancers which, gnawing at the very vitals of society, demoralize as well as disable our partners in life

by their pernicious physical and mental effects. It is to the prevention of this form of crime that I would, more than to any other, call the attention of this honored body and the medical profession at large, to the end that all who may be found disguising a criminal purpose under the cloak of a noble science be outlawed by the profession, hounded down and pointed out for prosecution when and wherever detected.

In pointing out, thus tersely, the palliative means against the criminal taking of human life, which medical men (the confessors of the XIX century) have at their command, it but remains for me to terminate with the consideration of the legal aspect of the subject. Elsewhere,* I have had occasion to abundantly describe the procedure of our Coroner's courts, as well as the duties of physicians who may be selected by that official to assist him in his investigations; and will therefore pass that portion of the subject, in order to touch upon another of more importance to the medical profession generally.

In this progressive country, where medicine has in all its branches, successfully rivaled the progress of older nations, it is surprising to find that we have as yet no branch of this science taught in regard to its practical application to the law. Austria, Germany, France, Italy, all have their codes and well defined systems for the guidance of practitioners of medicine, when called upon to assist the State; but on this continent, medical jurisprudence, if at all known and practiced, is certainly in its infancy. No chairs, no teachers, or only nominally so, grace our great and well known centres of medical learning, and it is a well established as well as deplorable fact, that even our prominent practitioners shrink from contact with the law, and decline to give the State the benefit of their wisdom and experience. A condition of affairs due only to the fact that they lack the knowledge of their relations thereto, and do not care to place themselves in the situation of being roughly handled and ridiculed by the flippant and discourteous gentlemen who occasionally practice in our courts of law. Owing to our admirable system of non-centralization and the perpetual struggle for autonomy which is continually taking place between different districts, it has not been possible for our legislators to promulgate laws for the establishment of a health-police and medico-legal officers, as they exist in older countries. And while medical jurisprudence cannot be called a science apart, it is to be defined as the application of the exact principles of medical science to the necessities of the State, for the better administration of public justice. In my official position I have been obliged to give much thought and study to this important question, and long ago came to the conclusion that if physicians knew their relations to the law, both the community and the medical profession at large would be the gainers.

I therefore call upon this honored body, which represents the whole medical fraternity of Pennsylvania, to take such action as the circumstances require; and to this effect, I suggest that this Society make it its duty to urge upon medical faculties, members of the profession and students, the high importance of a thorough knowledge of the principles of medical jurisprudence. To further the advancement of which I also suggest that this Society take steps for the creation of a special section, having for its object the science of medical jurisprudence, or State medicine, at the coming meeting of the American Medical Association.

In the evening, at seven o'clock, the Annual Address by the President, Dr. Jacob L. Zeigler, of Mount Joy, was delivered, in the Academy of Music, after which the delegates were handsomely entertained by the citizens, at their homes.

*Handbook for Coroners. By John G. Lee, M.D. Philadelphia, 1881.

THURSDAY, MAY 11TH.

The Society convened at nine o'clock. Prayer was offered by the Rev. J. Allan Maxwell. After the usual routine business, the following report was offered:—

Report of Committee on Defective Hearing of Locomotive Engineers.

The Chairman of the Committee, Dr. Laurence Turnbull, of Philadelphia, presented the Report of the Committee on Defective Hearing of Locomotive Engineers, Firemen and Conductors. He states that copies of the first report, of 1881, with its resolutions signed by all the members of the committee, had been sent, as directed by this Society, to the presidents and superintendents of all the railroads in the State, also to the members of the Legislature of Pennsylvania. The subject had elicited much interest, and copies of the report had been sent for from various parts of the United States. The committee were happy to state that the Pennsylvania Railroad Company have adopted rules and regulations for the examination of the hearing of all those in their employ, and no doubt other railroads will follow their example, being of interest and importance to them as well as to the traveling public. In the report will be found a comparison of the results of the examination of railroad employés, as compared with another branch of service, namely, the military, showing its importance both to the army and navy of the United States. The reports of the Health Bureaus of the Prussian and Wurtemberg armies are given for 1874–78 showing that during those four years there were removed, from disability on account of ear diseases, 1883 men. Dr. Turnbull has added to the report an appendix containg new cases with facts and observations from patients, and the opinion of engineers of the great utility of these examinations and the proper successful treatment of such defective individuals.

After which the address on Mental Disorders was delivered by Dr. Chas K. Mills, of Philadelphia.

Criminal Lunacy.

The following were among the subjects briefly discussed: The psychology of crime; the classification of criminals; the relation of crime to insanity; the tests of responsibility in criminal cases; the medico-legal methods of determining responsibility; and the disposal of the criminal insane, including under this last head such questions as the punishability of the insane, the necessity of modifying existing laws relating to

the insane, and the importance of establishing in Pennsylvania and elsewhere special criminal lunatic asylums.

The psychology of crime is a subject of the highest importance to society, and the increasing inclination to study it in the scientific spirit and by scientific methods, is a sign of advance.

Crime is often, although not always, the result of the organization of the individual, the outcome of the anatomical conformation and physiological development of the brain.

The distinction between vice and crime should always be borne in mind. Technically, crime denotes transgression of the law, while vice refers to the depravity of the individual. The vicious and depraved are not always criminals; and, on the other hand, criminals are not always vicious and depraved. The psychology of vice is really the fundamental question. Vice, according to Bucknill, is probably more infectious and polluting than crime; and while the latter is often the result of insanity, the former is very frequently the cause of it.

Moriz Benedikt, of Vienna, believes that he has discovered the anatomical basis of criminality in a deficient development of the convolutions of the brain, and a consequent excess and tendency to confluence of fissures. Prof. Parker, of Philadelphia, Prof. Osler, of Montreal, Dr. Mills, and others, have conducted investigations which show that these anatomical peculiarities are present in the lower classes of mankind in general.

Crime, as Benedikt indicates, should be viewed as the psychological act of the criminal. Criminals should be studied, not in mass, but as individuals, just as disease should be, and to a large extent is, investigated. Attempts at the classification of criminals by scientific methods have been made recently by Ferri, Krapelin, Lebon, Lacassagne, and others.

A large proportion of criminals are practically insane; they are not of sound brain and mind. In discussing the question of responsibility, however, too much stress is laid upon words. "Sanity" and "insanity" are really relative terms. In some cases responsibility should be made the test of sanity, rather than sanity the test of responsibility. The question of responsibility, when it is an open one, should always be determined by a painstaking, scientific investigation into each individual case.

Criminal responsibility cannot be adjudged by the test of a knowledge of right and wrong. Criminals, sane or insane, can generally distinguish between right and wrong. They often glory in wrong doing, knowing that it is wrong-doing. In other cases, as Dr. Ray puts it, the particular criminal act becomes divorced in the mind of the criminal from crime in the abstract. Even the presence or absence of delusion does not always constitute an absolute test of insanity and responsibility. Sometimes those who are most insane have no delusions; and, on the other hand, sometimes those who are medically and legally sane have temporary delusions. Responsibility must be measured in doubtful cases by the power of control. It is a question of power rather than knowledge. Could he help committing the crime? is the crucial question. Every scientific aid, medical and legal, should be made use of in answering this question correctly, so that neither society, on the one hand, nor the individual on the other, shall be wronged.

Where does the crime of Guiteau belong? Was his crime, as Dr. Allan McLane Hamilton asserts, simply the result of a low state of the morals for which the individual is solely responsible; or was he, by virtue either of his inheritance or his environment, or of both, insane and irresponsible? It is necessary to make a critical study of the case, before coming to a conclusion. The weight of evidence is, on the whole, in favor of his insanity. As to the form of his insanity—whether reasoning mania, as asserted by Hammond, religious monomania, as claimed by Beard, or an early stage of general paralysis of the insane, as suggested by Folsom—there may be some doubt. His case would probably be considered by most modern authorities as a form of affective insanity, or so-called moral insanity. Many proofs of the existence of insanity and insane tendencies in his relatives, direct and collateral, have been adduced. His life, from about his eighteenth year until the period of his crime, was a record of religious fanaticism and delusion, of lust and immorality, of shiftless wanderings, of chimerical enterprises, of impulsive tendencies and of maniacal outbursts. His conduct before, during, and since the trial—eccentric, outrageous, and showing an utter miscomprehension of public opinion—has certainly not been that of a perfectly sane man. When he shot the President, he was evidently under a delusion as to what he called his duty to the country, and as to the effect which the act would have upon his own future.

Expert testimony was not used properly, nor to the best advantage, in the trial of Guiteau. The trials of criminals, particularly criminals whose lives are at stake, should be conducted in a strictly scientific manner. As the law at present is administered, courts of justice, so-called, become too often courts of injustice, or arenas of public display. Experts should not be partisan. A commission of experts should decide as to the insanity of prisoners charged with crime. The work of this commission should be for the court, not for prosecution or defence. This plan has been recommended by our most thoughtful criminalists and alienists.

It may sometimes be proper to punish criminals who are the victims of some of the forms of partial insanity; but it is in such cases above all others that justice should be tempered with mercy, that punishment should be inflicted, as far as possible, with a view to education and reformation. Where neither of these ends can be attained the punishment should be in the form of seclusion or sequestration, with the view of protecting society.

Our laws with reference to the confinement in asylums of criminals acquitted on the ground of insanity should be modified so as to better meet the requirements of justice in special cases.

In cases of homicidal insanity the law might be so framed as to make imprisonment in criminal lunatic asylums for a definite number of years compulsory, and also to put it within the power of the court and juries to make this imprisonment for life.

Capital punishment in the cases of insane criminals probably does more harm than good. If, as seems probable, Guiteau should go to the gallows with the air of a hero and martyr, his example will incite other insane criminals to deeds of violence and blood.

The experience of the country with reference to a case like that of Guiteau cannot fail to forcibly show forth the great neglect of society to properly guard individuals against criminal lunatics of a certain class. This class is made up of those who, in the expressive language of the street and newspapers, are known as "cranks." While the right of both the sane and the insane to liberty should be carefully guarded, the right of the sane to protection from the insane, should be provided for with at least an equal amount of care.

Too many cranks and lunatics are loose in the land. At a recent meeting of the "National Association for the Protection of the Insane and the Prevention of Insanity," held in New York City, January 20th, of the present year, Dr. C. L. Dana made the important statistical statement, that of the more than sixty thousand lunatics in this country, upward of twenty thousand were outside of asylums.

Mistaken pride often leads a family to cover any facts which tend to show the existence of mental derangement in any of its members, even, in some instances, when the insane tendencies are of such a character as to endanger property, limb, or life. Society is to blame in failing to make sufficient provision for the idiotic, imbecile, and insane; and in not providing, by special enactment, and the cultivation of a proper public feeling, for the separation of individuals, dangerous by reason of lunacy or half lunacy, from the rest of the community.

The founding of special criminal lunatic asylums, like those which have been established in England, would be a step in the right direction. Few institutions of this kind are in existence in this country. At Auburn, New York, is a Criminal Insane Asylum, and at Fulton, Missouri, another, not yet completed. In Illinois an asylum for insane convicts is building. Steps are now being taken in Massachusetts to provide for separating insane criminals from the other insane. The State of Pennsylvania has no asylum of this character. The insane of the vicious classes, and the criminal insane, whether tried or untried, convicted or unconvicted, are the inmates of the same asylum with the harmless, the innocent, and the refined; not infrequently the latter are the enforced companions of the former.

Dr. W. H. Daly, of Pittsburg, then presented an address on "Some Questions Relating to Tonsillotomy."

Dr. J. A. Lippincott, of Pittsburg, Pa., followed with a paper on

Abscess of the Orbit.

Post-ocular abscess, though a very formidable, is, happily, a very rare affection, as attested by the statistics of ophthalmic hospitals, both in Europe and in this country. The symptoms are variable within certain limits, and depend partly upon whether periostitis is the initial lesion, and partly upon whether the disease is acute or chronic, sthenic or asthenic. In acute sthenic abscess the constitutional excitement is especially marked. In asthenic cases the febrile symptoms may be of moderate violence. There is pain and tenderness in and about the eye, redness and swelling of the lids, ptosis, and conjunctival chemosis. At first there is no secretion, but a slight muco-purulent discharge is developed later. In the early stage the eyeball appears to occupy its normal position. Very soon, however, it becomes decidedly and suddenly protruded. The exophthalmos may be so extreme that the cornea may be constantly uncovered, and thus exposed to the influence of mechanical irritants. From this cause, added possibly to some disturbance of the trophic nerves, there may be corneal ulceration, and consequent permanent corneal opacity. The axis of the protruded globe is generally directed downward and outward. The pupil is sometimes contracted and sluggish, even when there is no involvement of the tissues of the eyeball proper—a phenomenon which is perhaps explicable by the fact that the sympathetic nerve fibres are more obnoxious to pressure and other injurious influences than the filaments of the oculo-motor. The sight is usually more or less impaired. The visual field is contracted, and phosphenes are observed. The ophthalmoscope may show dilatation and tortuosity of the retinal veins, or serous infiltration of the disk and retina, or a true optic neuritis. Sometimes the impaired vision is due to the stretching of the optic nerve, sometimes to the presence of retro-bulbar neuritis, and sometimes to other intra-ocular conditions than those mentioned above, such as detachment of the retina, irido-choroiditis and panophthalmitis.

The pus sometimes escapes spontaneously through the lids. The globe recedes somewhat into its cavity; and then, in a favorable case, the opening will gradually heal up, and the eye, by degrees, recover more or less completely its functions. The purulent collection, however, may ulcerate through the orbital wall into the antrum, or nose, or into the cranial cavity, and so produce abscess of the brain.

Orbital abscess may be caused traumatically, as by wounds of various kinds and the lodgment of foreign bodies, or by surgical operations on the eye and its appendages. 2d. By exposure to cold and wet. 3d. As a sequela of severe constitutional diseases, such as pyæmia, erysipelas, etc. 4th. By the extension of the inflammatory process from surrounding parts, etc.

The affections most likely to be mistaken for abscess are tumors, particularly aneurismal and cystic; and frequently, in order to avoid errors in diagnosis, recourse must be had to the exploratory puncture. This should be made not with an exploring needle, or slender-bladed knife, but with a fine aspirating needle, since in employing either of the two former instruments the pus is apt to be wiped off by the overlying tissues. Care must be taken not to remove with the aspirator more fluid than is required to settle the diagnosis, because the tension may be thereby considerably diminished, and the difficulty of the subsequent evacuating incision be thus greatly enhanced.

Treatment.—If the case be seen early, and be

of a sthenic character, ice should be applied about the eye, and the antiphlogistic regimen adhered to. If, however, as is the rule, the patient be feeble, supporting treatment ought to be employed, tonics, nutritious diet, etc. On the slightest appearance of suppuration a free incision should be made, and the contents of the abscess evacuated. The knife should be inserted with its plane parallel to the orbital wall, but with the edge turned slightly away from the eyeball. The puncture may be made either in the retro-tarsal fold, or through the upper lid close to the orbital margin. After the incision, an attempt ought to be made to determine the presence or absence of periostitis, by the cautious use of the probe, and by chemical and microscopical examination of the pus. If the track is long, a tent of oiled lint may be inserted. Poultices should be applied, and gentle pressure instituted and maintained. If there be evidence of necrosis, the opening must not be allowed to close up too readily, and antiseptic solutions may be injected with advantage. Of course, if there is any reason to suspect the presence of a foreign body, careful search should be made with the probe, and, if the offending substance be found, it must be promptly cut down upon and removed.

After which Dr. Chas. S. Turnbull, of Philadelphia, read a paper, entitled

Powdered Boracic Acid in the Treatment of Chronic Purulent Inflammation of the Middle Ear—Otorrhœa.

A most gratifying experience in the use of powdered boracic acid in the treatment of chronic purulent inflammation of the tympanal mucous membrane, the constant symptom of which is otorrhœa, has induced him to consider the antiseptic, or what might be more accurately termed, the dry method of treatment. The use of the syringe is, in his practice, a thing of the past, except in so far as employed for the removal of impacted cerumen, foreign bodies, etc. With his father (L. Turnbull), Knapp, Politzer, Gruber, Schrötter and others, he has had unusual facilities during the past twelve years, in which he has been working in the department of otology, for studying purulent diseases of the middle ear; and although having of late followed quite a new departure in aural therapeutics, has been able to record a much larger than ordinary percentage of absolute cures.

The marked success which has attended the modern, dry, antiseptic treatment of cases under his care has led him to advocate its use in this most common form (in this country) of aural disease. Up to about two years ago he felt like avoiding all cases of chronic purulent middle ear inflammation, *i. e.*, otorrhœas. He examined and treated the same with inward misgivings, because he was a non-believer in all the methods in vogue, and had learned by experience to have no faith in the prescribed forms of cleansing, medicating and managing the ears of such of his patients as suffered from chronic otorrhœa. The odor of the usually worse than fetid discharges was at times actually nauseating, and until he commenced to use Platt's chlorides, a most valuable disinfectant and deodorant, could keep neither finger nor instrument free from the characteristic odor.

The practice of either medicine or surgery gives us more or less pleasure in so far as we are successful, and he confesses that although successful to a degree, scarcely a day passed without his feeling chagrined at his utter want of confidence in the ordinary methods of treating chronic purulent discharges from the ear.

Nitrate of silver was used for polypoid granulations, which sprouted and waxed large under its topical stimulation, while solutions of the same in various strengths now and then seemed to act happily and cure certain cases. Carbolic, chromic and acetic acids, sulphate and sulpho-carbolate of zinc, sulphate of cadmium and copper, alum, permanganate of potassium, etc., were in turn used, and found beneficial in only a few cases. Then tannin as a powder was tried, and still more recently when combined with iodoform and thymol. These dried or partially melted and filled the meatus with an ugly, black mass, which acted as an irritating foreign body, and smelled almost as disagreeably as the purulent discharge itself. Thymol was formerly supposed to cover the odor of iodoform. Patients invariably objected to the odor of iodoform, and the so called "deodorized iodoform," as soon as exposed to the air, smells as badly as the original article; and he is of the opinion that if a deodorized iodoform be procured, it will be no longer iodoform, *i. e.*, from a therapeutical standpoint.

Anything new, and in therapeutics especially, as a means of treatment of that most frequent of aural symptoms, "otorrhœa," must call for immediate and specific attention, not only on account of its practical worth, but also for the greater power it gives every physician to control, yes cure, what hitherto has been generally considered an incurable symptom of a disease of the middle ear.

This symptom of disease of the drum cavity (tympanum) is so frequent in this country that, as is often the case, a symptom of a disease is dignified with a specific title, as is the case with the use of the term "otorrhœa," which frequent usage in medical parlance has caused to be understood as synonymous with the now recognized and self defining name, "chronic purulent (or suppurative) inflammation of the middle ear."

The causes which may lead to the existence of a chronic discharge from the ear are well known to the profession.

Whatever causes tend to provoke an inflammation of the mucous membrane lining the middle ear, or its appendages, may lead to a perforation of the membrana tympani, and a discharge from the ear.

In passing, I must mention that it oftenest occurs in infancy, as reflex (tonic) from dentition, it may be, and is, alas! too often a sequence of the dread exanthemata, inherited taints (tubercle and syphilis) by inflammatory extension from the gastro-pulmonary mucous membrane, nasal, post-nasal, supra-post-nasal and tubal spaces, and the much vaunted irrigating treatments for the same. Last, but not least, from exposure, carelessness in cleansing the meatus, too forcible blowing of the nose, bathing,

the use of aqueous solutions of castile soap, instillations of olive oil, glycerine, etc., etc. The invariable tendency of most forms of acute purulent inflammation of the middle ear is to get well of themselves, if it were not that the peculiar conditions of the parts provoked the fermentation of stagnant secretions, the formation of pus "from the emigration of bacteria" (Lœwenberg), and the meddlesome interference of those who never pause to consider the conditions present, but pursue time-dishonored plans of guess treatment, which are, as a rule, dependent upon the fragile experience of empiricism. The curing, *i. e.*, the stopping, of a purulent discharge from the ear is the only desideratum, as it would seem, to many sufferers and their medical attendants; he says that, as a rule, it is not the discharge in itself which does harm; it is a too heroic treatment and the subsequent process of cicatrization, which to a greater or lesser extent damages the hearing power. It calls for intelligent management, as well as treatment, so that the functions of the acoustic apparatus (the tympanum and its appendages) may not only be preserved intact but kept in motion.

He has often been met with the objection, and, confesses it is generally well put, "Why dry up the purulent discharge from the ear, since, when suppuration is actually taking place, patients as a rule hear best?" As the discharge ceases in a case of otorrhœa hearing power is, as a rule, materially diminished; but he always makes reply by asking the question: "Which is the better, half a loaf or no loaf?" *i. e.* to stop the discharge and save some hearing which will be permanent, or allow the discharge to continue, and in a greater or less time lose all hearing and become hopelessly deaf. Then, too, if only for the abolition of the disgusting fetor which accompanies such cases, if for nothing else, it is well worth while risking any fancied extension of the inflammatory process. Children with "running ears" are tabooed by their class and playmates. Adults are tolerated, while, self-conscious of this sickening odor from their ears, they shun society, and imagine, not without good cause, that every one is aware of their infirmity. The majority of such patients are generally willing to forego the greater or less amount of loss of hearing power if the offensive discharge can be prevented.

Beyond a doubt a discharging ear is a thorn in the flesh, to be withdrawn in the shortest possible time. Apart from the risk of damage, from a chronic purulent middle-ear inflammation and its otorrhœa, to the hearing and subsequent happiness of the individual, is the undoubted compromised condition of the same unfortunate individual's health. Fetid discharges run down the Eustachian tubes, and poison the system. This is no fancy deduction, but a solemn truth. He points at least ten cases treated within the last six months, where children have presented themselves in a chronic septic condition consequent upon the fact stated. By simple cleansing of the ears and teaching his patients how, by Valsalva's method, to blow the pus outward into the meatus, which he keeps filled with an antiseptic powder and not with cotton, he has met with most gratifying results in these same children, who, from pale and emaciated subjects, have grown into fat and ruddy specimens of humanity.

He has also been met with the objection that "if these discharges from the ear can be stopped, the disease will go to the brain." This idea had its origin in the fact that, heretofore, such heroic measures were used to check the discharge, such caustic solutions were poured into the ears, because no intelligent treatment was employed, and as in the majority of cases no careful ocular inspection of the parts was made, extension of disease to the inner ear or even brain resulted.

Concerning the "insufflation" of powder into the external auditory meatus, he has never been satisfied with the procedure, and says he was always forcibly reminded, on attempting such "insufflation," of the familiar trick of trying to blow a light paper ball into a bottle, which lies on its side. The harder one blows the more certain is the ball to fly out, rather than into the empty bottle. Precisely the same thing occurs when the attempt is made to insufflate powders into the auditory meatus; because the return current carries it all out again, leaving little or none in the meatus. The operator generally gets the most in his face. This point will be appreciated by those who have attempted to employ powdered *iodoform* in this way. Better drop one-fourth of the quantity proposed to be insufflated through a clean speculum. The ear is not to be syringed; it should be cleansed with absorbent cotton. A meatus as tender, and swollen, and excoriated, as they usually are in otorrhœas, can be cleansed with cotton on a probe. It cannot be done by guesswork nor in the dark. Unless the meatus be thoroughly illuminated, every pledget will, in the majority of cases, except in experienced and careful hands, impinge against one or the other side of the wall of the meatus, and cause pain, exudation, etc.

With the forehead mirror adjusted so as to illuminate the meatus, the (outer) cartilaginous portion of the meatus can be thoroughly cleansed. Having gone so far, a speculum is carefully introduced, *illuminating as I proceed*, and through this (unless the meatus be unusually large, when the speculum can be dispensed with) the inner (osseous) portion can be cleansed, down to the membrana tympani, or even further. So much for the meatus. Now the tympanum must be cleansed. He never attempts to wipe through or into a perforation, but while the patient, by Valsalva's method, blows out any intra-tympanal secretion, wipes it up; or in case of Valsalva's method being impossible or impracticable, he forcibly inflates with Politzer's air douche, and so frees the tympanum by blowing any collection into the external meatus.

If the cleansing be carelessly done more discharge is provoked and an artificial eczema, aggravated by the powder used, defeats the objects sought by a thorough cleansing. As a rule, all applications of any powders become painful when they enter the tympanal cavity, and more especially as they dissolve and run down into the Eustachian tube, through which experience has taught him he dare not allow even pure water to pass, if we in any way consult the comfort of

our patients. Solutions of borax, or better, boracic acid water and glycerine, may be used if the sensitiveness of the parts or the character of the secretions collected therein do not allow the use of the cottoned probe. Experience in the procedure of cleansing is absolutely necessary to success, and the operator must make up his mind to conscientiously don the forehead-mirror and patiently and carefully, under a good illumination, wipe out the meatus.

Having cleansed the meatus, the speculum is to be removed and thoroughly dried, inside as well as outside, and with it in situ, the powder is to be poured into the speculum ad libitum. As the powder is filled into the meatus, through the speculum, it is packed, layer upon layer, not tightly, but firmly, meanwhile gradually withdrawing the speculum until it reaches the mouth of the meatus.

He has given up the syringe as a means of treatment, and has adopted the dry antiseptic method and the exclusive use of *powdered boracic acid*, which, in all chronic cases, he packs and repacks into the meatus until there is a cessation of all discharge.

It is not then that he would claim, for his father any discovery, but simply credit him for having first introduced "Bezold's antiseptic treatment" and perseveringly employed, and while advocating taught the use of, boracic acid powder for the treatment of "otorrhœa."

He described, at length, the exact details of the method which he considers indispensable to a successful use of powdered boracic acid for "otorrhœa," and furthermore, from his own experience and observation, says he has been led to consider this treatment as specific, because he has cured every case of the hundreds he has treated and kept records of for the past three years.

From that time to the present, with but few exceptions, the treatment recommended by Bezold was given a trial, but although Politzer, of Vienna, recommended it highly, and Cassells, of Glasgow, did the same thing, no one was satisfied that the plan of treatment was particularly efficacious, or to be particularly preferred more than many others.

The great mistake, as he has discovered, was in the fact of many experimenters not having observed Bezold's instructions, viz: that *the boracic acid must be nicely powdered.*

Oftentimes one packing is enough. In other cases the packed powder was washed out in a few days, but he persevered, and has always been rewarded for any trouble in filling and repacking. If the discharge ceases, and leaves a hardened mass of discharge and powder, etc., filling the meatus, it must be removed—but not by force, nor by syringing. It must be softened by the instillation of warm *fluid cosmoline* (petroleol), which has the charming recommendation of not becoming rancid by heat, etc. As the mass softens it may be delicately picked loose and blown out of the meatus, by the rubber bag of a Politzer's air douche.

Perforations are healed, and large ones at that; tympanal mucous membrane becomes almost normal in appearance, purulent secretion and all odor is removed, and "running ears" are absolutely cured, by this most valuable antiseptic agent.

Solutions of boracic acid powder, in equal parts of glycerine (which will partly dissolve it) and water, ten to forty grains to the ounce, are to be recommended in acute purulent inflammations of the middle ear, or even in chronic purulent inflammation, especially those occurring in small or unruly children. Such a solution should be warmed, well shaken, and dropped into the ear twice or thrice daily. Where perforations do not heal, on account of their great size, or sclerosis of tympanal mucous membrane, etc., he recommends most highly *powdered boracic acid*, suspended in fluid cosmoline, in varying proportions, warmed, *shaken*, and dropped into such ears once or twice weekly.

Instruments used in aural surgery should be kept in or dusted with powdered boracic acid. He has seen some forms of parasitic otorrhœas transferred from patient to patient, and even with the most careful surgeon a case of aspergillus is often followed by one or more fresh ones, occurring in those of his patients who have been treated about the same time.

In this connection he states that after careful microscopic investigations, and the study of clinical facts pertaining thereto, all the so-called varieties of *aspergillus* which are usually divided, according to their apparent color, into different species, are but one and the same fungus, as it undergoes the successive changes from white, yellow, red, or purple, to black, each representing successive stages of development of the same fruit, which, when fully matured, is *black* (nigricans).

Purulent tuberculous inflammation of the middle ear can be dismissed in a few words: Do not expect to cure such; it cannot be done.

Irritating medicaments, as glycerine, and particularly solutions of castile soap (castile soap solutions have been the cause of chronicity of one-fifth of all the otorrhœas which he has seen in children) the tinctures, oils which become rancid, etc., should be kept out of the ear, and the parts, gently cleaned with absorbent cotton, will, in the majority of cases, cure themselves. If the discharge becomes fetid, antiseptic solutions had better be used as instillations, and under no circumstances does he allow the ear to be syringed. He is using fluid cosmoline entirely in his practice, and as this mineral oil does not become rancid, and so induce parasitic inflammations, it is best for the purpose, and may be conveniently used as a vehicle for powdered boracic acid, powdered extracts of opium and belladonna, morphia, atropia, etc. Boracic acid was first obtained by Homberg (1702) and was formerly known as *sal sedatious hombergi*. It is prepared by adding hydrochloric acid to a hot solution of borax, and crystallizes in white, translucent scales of a white pearly lustre and of a slight acrid taste. Crystallized boracic acid is insoluble in ether, soluble in alcohol, glycerine and slightly in water.

Boracic acid possesses decided antiseptic, antifermentative and deodorant properties. It arrests fermentations and putrefactive decomposition, and is destructive to minute organisms, bacteria vibrios, etc.

Borated cotton is of no use whatever, in aural surgery, the ordinary absolutely clean absorbent cotton being preferable, and especially so when dusted with the dry powdered boracic acid. It is by no means an easy undertaking to pulverize the scaly crystals of boracic acid, and once in the mortar they must be bruised and pounded instead of rubbed, and all careful pharmacists use a bolting cloth to make the powder impalpable; the process at best is a tedious one.

He dwelt at unusual length upon the minutiæ of what he was advocating, *i. e.*, the dry method of treating otorrhœa with powdered boracic acid, since to secure success every step described required to be carefully considered and scrupulously carried out.

This method he most earnestly advocates as well worth a trial, and says, cease syringing ears except for the removal of cerumen and foreign substances, and rely upon powdered boracic acid. He adds, look upon water and glycerine, and the much extolled and cursed castile soap solutions as local irritant poisons. He concludes by stating, that success awaits those who will but adopt this method, which, at first sight apparently arduous, will eventually prove most profitable, both to patient and surgeon.

Following Dr. Turnbull's paper Dr. E. J. Jackson, of West Chester, read a paper on the

Comparative Action of Certain Mydriatic Alkaloids.

Having spoken of the uncertainty prevailing as to whether these drugs were identical in their physiological and therapeutic properties, or as to how they differed, if they did differ, in these respects, reference was made to the assertion of Prof. Landenburg, that daturia, duboisia, and hyoscyamia, are chemically identical in all respects. A study of the physiological action of these three drugs was the basis of the paper. It was found that on frogs the symptoms produced by each of the drugs were, indisposition to move, and general paresis, going on to complete abeyance of voluntary movement, and great diminution of reflex action. This stage, after several hours, gave way to a condition of tetanus, which lasted some days, when the frog had received $\frac{1}{1000}$ of its weight of the alkaloid.

In a series of experiments on himself, the writer had taken $\frac{1}{8}$ of a milligram of each alkaloid hypodermically. This produced a temporary fall, followed by an increase of the pulse rate, by giddiness, dryness of the throat, affection of the eyes, increase of urine, and headache. The subjective symptoms seeming most severe with hyoscyamia and least so with daturia; the pulse rate was equally affected in all cases.

Another series of experiments was to determine their local action on the pupils and accommodation. With the amount of the drug employed (one drop of a $\frac{1}{1000}$ solution) dilatation began for daturia at 22 minutes; duboisia at 23 minutes, and hyoscyamia at 21 minutes. The pupils became dilated to the maximum. The accommodation fell from 9.75 dioptrics to 4.8 D. for daturia, 3.2 D. for duboisia, 2.3 D. for hyoscyamia. Recovery of pupil and accommodation occurred simultaneously, for daturia at 6 days, for duboisia at 6½ days, and for hyoscyamia at 6¾ days. The above results were the means of three trials with each drug in the same person. The writer thought that whatever value might be set upon the results of this study, it seemed to favor the idea that the three drugs in question were physiologically identical.

Dr. Jos. Hearn, of Philadelphia, then presented a paper on "The Nature and Treatment of Rodent Ulcers," after which the Society adjourned. The proceedings of Thursday afternoon and Friday will be published in our next issue.

Insanity from Drugs.

Dr. H. H. Kane, of the De Quincey Home, Fort Washington, New York City, requests information from the medical profession on the following points:—

1. Have you ever seen any cases of insanity, temporary or permanent, or any deviation from the normal mental or moral state, that could be traced directly to the use of a single large dose, or the continued use of opium, or any of its preparations or alkaloids?
2. Of what type was such insanity? Give symptoms.
3. State patient's age, sex, civil condition, and occupation.
4. What was its duration and result?
5. State color of patient's hair, eyes, and complexion.
6. Was there any hereditary tendency to insanity, or any history of alcoholism, grave nervous disease, or any drug habit in the patient's ancestors?
7. What amount of the drug was used, and for how long a time?
8. What line of treatment was pursued?
9. Please answer the same questions regarding the use of chloral hydrate.
10. Please answer the same questions regarding the use of bromide of potassium, or any other drugs.

Stamps will be returned for all answers. When so requested, communications will be treated confidentially, and a reprint of the article embodying the results of such statistics will be sent to each correspondent.

M. Pasteur.

M. Pasteur has been inaugurated a member of the French Academy. He was received on April 27th, as a successor of the late M. Littre, on whom M. Pasteur, in his reception speech, made a fierce attack. M. Ernest Renan replied to the speech.

Dr. Lamson.

Dr. Lamson, the American physician who fatally poisoned his brother-in-law in England, with aconitia, was hanged April 28th. He virtually confessed his guilt.

—A medical gentleman, known to the readers of this Journal, who proposes going abroad early in July, will, if desired, take professional charge of any invalid who may wish to secure the benefit of a trans-atlantic voyage. Address "J," care of REPORTER.